

**PHASE I
SITE HYDROGEOLOGIC INVESTIGATION AT
THE ENTERPRISE AVENUE LANDFILL
SECOND REPORT OF HYDROGEOLOGIC RESULTS**

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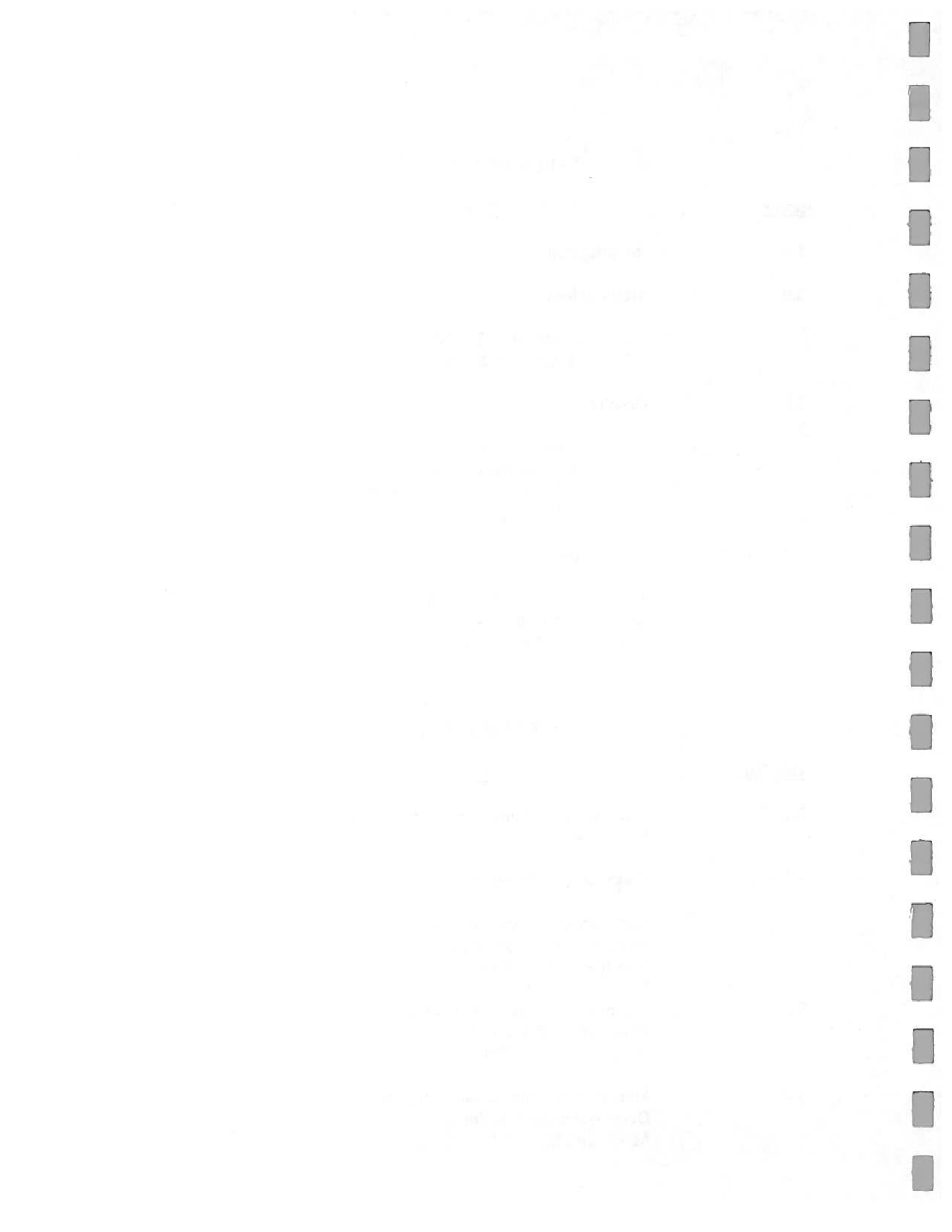


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1.0 INTRODUCTION

This report incorporates recent hydrogeological data collected by Roy F. Weston, Inc. (WESTON®) at the Enterprise Avenue Landfill from 12 April 1994 to 10 June 1994 which was not included in the first WESTON Phase I Hydrogeological Investigation Report dated 29 April 1994 (Phase I - 29 April 1994). Section 2 (Methodology) of this report discusses the groundwater elevation data and groundwater sampling procedures. Section 3 (Results) of this report discussed the site hydrogeology, more specifically the direction of groundwater flow; and the quality of the groundwater in the shallow, intermediate, and deep water-bearing zones at the EAL. This report's conclusions are presented in Section 4.

This report is the second of three reports presenting the results of the Phase I hydrogeologic investigation. The third report, summarizing all of the data collected during this investigation, is expected to be completed at the end of July.

2.0 METHODOLOGY

2.1 GROUNDWATER ELEVATION MEASUREMENTS

Six rounds of groundwater level measurements were collected at the site with an electric water level probe. Complete water level data collection rounds, which included all 18 of the newly installed wells, the four existing wells, and the eight landfill piezometers installed as part of the geotechnical investigation, were taken on 6, 12, and 26 May 1994 and 10 June 1994. A round of water level measurements taken on 12 April 1994 did not include well triplet WM-5 due to airport access issues. Another round of water level measurements taken on 27 April 1994 did not include the four existing wells because of time constraints. Additional water level data will be collected during the months of June and July. Analysis of these data will be presented in the third report.

2.2 GROUNDWATER SAMPLING

Groundwater monitor well sampling was conducted between 2 and 5 May 1994. Groundwater samples were collected from the six well triplets installed between 18 January and 18 February 1994, and analyzed for the following parameters:

- Target Compound List (TCL)
 - Volatile organic compounds (VOCs)
 - Semi-volatile compounds/Base neutral acids (SVOCs)
 - Pesticides
 - Polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL)
 - Metals
- Cyanide
- Total dissolved solids

A list of the TCL and TAL compounds and analytes is presented in Appendix A. WESTON followed the low-flow purging and sampling methods identified in Amendment No. 2 of Final Work Plan for the Hydrogeological and Geotechnical Investigation of February 1994 (Amendment No. 2). During well sampling, a 0.2- to 0.5-liter per minute (lpm) flow rate was generally maintained at each well location; however, rates up to 1.05 lpm were sometimes necessary to overcome head gradients.

Purging was performed using a decontaminated 2-inch Grundfos RediFlo pump controlled by a converter box, which was powered by a compatible generator. Water quality parameters were collected throughout the purging process using an inline flow-through cell equipped with temperature, specific conductivity, pH, and Eh instrumentation. Additional dissolved oxygen and turbidity readings were taken using separate field instruments. Groundwater samples were collected after water quality parameters stabilized. A groundwater sampling summary, showing the stabilized field measurements attained at the end of the low-flow purging, is presented in Appendix B.

Field instruments were calibrated each morning, and the calibration readings were recorded in a field book. Prior to use and between sampling locations, all non-dedicated sampling equipment was decontaminated according to specifications.

Groundwater samples were collected in laboratory containers prepared in accordance with United States Environmental Protection Agency (U.S. EPA) protocols. The type of

Table 2-1
Enterprise Avenue Landfill
Summary of Groundwater Sample Analyses - May 1994

Laboratory Batch Number	Well ID	Identification	Date	Time	Sample Type	Analytical Parameter				
						TCL	P/PCB	TAL Metals	CN	TDS
9405L493	WM-1S	2-GW-WM-1S	05-May-94	1150	Routine	VOC	X	X	X	X
9405L493	WM-1M	2-GW-WM-1M	05-May-94	1150	Routine		X	X	X	X
9405L493	WM-1M	2-DP-WM-1M	05-May-94	1150	Duplicate		X	X	X	X
9405L493	WM-1D	2-GW-WM-1D	05-May-94	1600	Routine		X	X	X	X
9405L493	WM-2S	2-GW-WM-2S	05-May-94	945	Routine		X	X	X	X
9405L449	WM-2M	2-GW-WM-2M	02-May-94	1715	Routine		X	X	X	X
9405L449	WM-2D	2-GW-WM-2D	02-May-94	1615	Routine		X	X	X	X
9405L449	WM-3S	2-GW-WM-3S	02-May-94	1115	Routine		X	X	X	X
9405L449	WM-3M	2-GW-WM-3M	02-May-94	1055	Routine		X	X	X	X
9405L449	WM-3D	2-GW-WM-3D	02-May-94	1320	Routine *		X	X	X	X
9405L449	WM-4S	2-GW-WM-4S	03-May-94	1205	Routine		X	X	X	X
9405L449	WM-4M	2-GW-WM-4M	03-May-94	1030	Routine		X	X	X	X
9405L449	WM-4D	2-GW-WM-4D	03-May-94	1000	Routine *		X	X	X	X
9405L472	WM-5S	2-GW-WM-5S	04-May-94	1110	Routine		X	X	X	X
9405L472	WM-5M	2-GW-WM-5M	04-May-94	1045	Routine		X	X	X	X
9405L472	WM-5D	2-GW-WM-5D	04-May-94	1300	Routine		X	X	X	X
9405L472	WM-5D	2-FB-WM-5D	04-May-94	825	Field Blank		X	X	X	X
9405L493	WM-6S	2-GW-WM-6S	04-May-94	1545	Routine		X	X	X	X
9405L472	WM-6M	2-GW-WM-6M	03-May-94	1530	Routine		X	X	X	X
9405L472	WM-6D	2-GW-WM-6D	03-May-94	1510	Routine		X	X	X	X
9405L449		Trip Blank	02-May-94		Trip Blank		X			
9405L449		Trip Blank	03-May-94		Trip Blank		X			
9405L472		Trip Blank	04-May-94		Trip Blank		X			
9405L493		Trip Blank	05-May-94		Trip Blank		X			

* - Extra volume collected for matrix spike and matrix spike duplicate blanks.

Note: The MS/MSD sample collected at WM-4D was for cyanide only;

all other MS/MSD samples were collected at WM-3D.

TCL - Target Compound List

TAL - Target Analyte List

VOC - Volatile Organic Compounds

BNA - Base Neutral Acids

P/PCB - Pesticides and Polychlorinated biphenols

CN - Cyanide

TDS - Total Dissolved Solids

sample container, volume required for analysis, and any required preservatives were the same as reported in the Phase I - 29 April 1994 report. At the request of U.S. EPA, representatives of the Pennsylvania Department of Environmental Resources (PA DER) collected split samples from wells WM-1M, WM-2S, WM-5M, and WM-6S. Samples for VOC analysis were collected separately. To assure sample uniformity, all other groundwater samples for organic analysis were first collected in Level 1 laboratory-prepared 2.5-liter amber containers. Samples for metal, cyanide, and total dissolved solids analysis were initially collected in Level 1 laboratory-prepared 1-gallon plastic containers. The samples were then split between WESTON and PA DER into individual sample containers.

Sample collection data identifying laboratory quality assurance and quality control (QA/QC) samples, including trip blanks, field blanks, duplicates, and matrix spike (MS) and matrix spike duplicate (MSD) blanks is presented in Table 2-1. One complete QA/QC sample set, with the exception of trip blanks, was collected as outlined in Amendment No. 2. Trip blanks were included in every shipment.

WESTON field personnel followed EPA chain-of-custody procedures to assure the integrity of all samples. Sample packaging and shipping were completed using the methods identified in Amendment No. 2.

Methods used for the laboratory analysis of groundwater for the previously specified parameters were the full TCL and TAL using the EPA Contract Laboratory Program (CLP) Superfund Analytical Methods for Low Concentration Water for Organic Analysis (10/92) and Low Concentration Water for Inorganic Analysis (10/91).

3.0 RESULTS

3.1 GROUNDWATER QUALITY

3.1.1 Shallow Water-bearing Zone

A summary of the water quality parameters collected from the shallow wells during the May 1994 groundwater sampling event (second round of sampling) is presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the shallow wells ranged from 4.52 units in WM-1S to 6.77 units in WM-3S. The Eh of the groundwater ranged from -68 millivolts (mV) in WM-2S to 358 mV in WM-1S. Specific

Table 3-1
Enterprise Avenue Landfill
Water Quality Parameters – May 1994

Well ID	Water Quality Parameters					
	Temp (C)	Specific Conductance (mS/cm)	pH (units)	Eh (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
WM-1S	18.1	188	4.52	358	5.1	9
WM-2S	16.6	2040	6.52	-68	2.1	6.96
WM-3S	16.6	1956	6.77	-121	2.8	11
WM-4S	18.2	2020	6.44	-116	1.4	40.8
WM-5S	13.2	1582	6.42	-94	2.3	59.3
WM-6S	15.0	723	6.63	-123	1.2	3.1
WM-1M	17.0	477	6.84	-128	2.2	14
WM-2M	17.5	903	6.67	-121	4.5	5.2
WM-3M	16.3	1442	6.52	-137	1.7	2.6
WM-4M	16.0	876	6.87	-123	1.6	3
WM-5M	14.7	803	7.19	-164	1.4	8
WM-6M	16.1	511	6.95	-108	0.8	4.03
WM-1D	15.1	311	6.95	10	2.2	>200
WM-2D	16.4	59	5.88	220	3.0	34
WM-3D	15.7	324	6.28	168	2.0	179
WM-4D	14.6	311	6.73	130	2.9	>200
WM-5D	13.9	332	8.23	-142	1.3	>200
WM-6D	14.4	510	6.51	93	2.4	32

C – Degrees Celsius.

mS/cm – Milliseimens/centimeter.

units – Standard pH units.

mV – Millivolts.

mg/L – Milligrams/Liter.

NTUs – National Turbidity Units.

>200 – Greater than instruments range.

conductivity ranged from 188 milliseimens/centimeter (mS/cm) in WM-1S to 2040 mS/cm in WM-2S. Dissolved oxygen ranged from 1.2 milligrams/liter (mg/L) in WM-6S to 5.1 mg/L in WM-1S. Turbidity ranged from 3.1 National Turbidity Units (NTUs) in WM-6S to 59.3 NTUs in WM-5S. The average groundwater temperature was 16.3 degrees celsius, which is 3.4 degrees warmer than the average temperature computed for the March 1994 sampling event (first round of sampling).

The results of the groundwater samples collected from the shallow wells during the second round of sampling are presented in Table 3-2. The results of the groundwater samples collected during the first round of sampling are also shown on this table. Chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

No volatile organic compounds (VOCs) were detected above the federal Maximum Contaminant Levels (MCLs) in samples collected from the shallow wells during the second round of sampling. VOCs were not detected in wells WM-1S, WM-4S, or WM-5S. Low levels of VOCs were detected in samples collected from wells WM-2S, WM-3S, and WM-6S. Fewer compounds were detected in a sample collected from WM-2S during the second round of sampling than during the first round of sampling. Carbon disulfide, ethylbenzene, and xylene were detected in WM-2S during the second round of sampling, whereas carbon disulfide, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, ethylbenzene, toluene, and xylene were detected during the first round of sampling. Of the three compounds that were detected in both rounds (carbon disulfide, ethylbenzene, and xylene) carbon disulfide was detected at a higher concentration during the second round of sampling (4 µg/L) than during the first round of sampling (0.5 µg/L) (estimated concentration). At WM-3S, in addition to xylene which was also detected in the first round of sampling, carbon disulfide was detected at an estimated concentration of 0.2 µg/L during the second round of sampling. Xylene was detected at 0.1 µg/L (estimated concentration). Carbon disulfide was also detected at 3 µg/L in a sample collected from WM-6S.

No semivolatile organics (SVOCs) were detected above federal MCLs in samples collected from the shallow wells. SVOCs were not detected in samples collected from wells WM-1S during either round of groundwater sampling. Phenol and 4-methylphenol were detected in a sample collected from WM-2S at 2 µg/L (estimated concentration) and 24 µg/L, respectively. These compounds were not detected during the first round of sampling. 4-methylphenol was detected in samples collected from WM-3S at 11 µg/L and

Table 3-2
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Shallow Water-bearing Zone
March and May 1994

Well ID:	WM-1S March	WM-1S May	WM-2S March	WM-2S May	WM-3S March	WM-3S May	WM-4S March	WM-4S May	WM-5S March	WM-5S May	WM-6S March	WM-6S May
Volatiles Organic Compounds (µg/L)												
Acetone	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	---	---	.5J	4	---	.2J	---	---	---	---	3	3
Chlorobenzene	---	---	2	---	---	---	---	---	---	---	---	---
Chloroethane	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	.1J	---	3	---	---	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	---	---	.1J	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	.4J	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	---	---	.2J	.2J	---	---	---	---	---	---	---	---
Toluene	.2J	---	.5J	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	---	---	---	---	---	---	---	---	---	---	---	---
Xylene	---	---	3	2	.2J	.1J	---	---	---	---	---	---
Semivolatile Organic Compounds (µg/L)												
Acenaphthene	---	---	---	---	---	---	---	---	---	---	---	---
Bis(2-Ethylhexyl)Phthalate	---	---	---	---	---	.1J	---	---	---	---	---	---
Phenol	---	---	---	.2J	---	---	---	---	---	---	---	---
2-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	---	---	---	.24	11	6	---	---	---	---	.2J	6
Pesticides (µg/L)												
PCBs (µg/L)	---	---	---	---	---	---	---	---	---	---	---	---

--- Not Detected Above the CRDL
J - Estimated value detected below CRDL
* Presence of elemental interference during analysis

Table 3-2
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Shallow Water-bearing Zone
March and May 1994

Well ID:	WM-1S March	WM-1S May	WM-2S March	WM-2S May	WM-3S March	WM-3S May	WM-4S March	WM-4S May	WM-5S March	WM-5S May	WM-6S March	WM-6S May
Metals (Total) (µg/L)												
Aluminum	917	1270	574 J	54.3 J	117 J	289	26.1 J	66.6 J	759 J	104 J	574 J	34.2 J
Antimony	---	1.8 J	---	---	---	---	---	---	---	3.1 J	---	---
Arsenic	---	---	6.3 J	7.7	11.3	9.8	8.5 J	10.1	11.4	18	14.4	11.4
Barium	60.5 J	42	432	604	500	531	368	495	464	750	109 J	155
Beryllium	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	1.2 J	---	---	---	---	---	---	---	---	---	---	---
Chromium	9.7 J	5.9 J	4.7 J	4.3 J	12.2	7.4 J	3.5 J	3.1 J	6.5 J	5.8 J	4.5 J	2.3 J
Cobalt	4.9 J	3.1 J	15.6 J	4.2 J	5.5 J	4.9 J	3.3 J	3.2 J	3.2 J	3.2 J	4.9 J	2.1
Copper	3.7 J	8.8 J	3.0 J	3.0 J	5.5 J	2.1 J	2.0 J	1.8 J	2.0 J	2.5 J	3.5 J	1.9 J
Iron	843	376	63400	58400	56600	5180	83000	3690	98600	11200	29100	3210
Lead	1.2 J	8.5	---	1.6 J	2.4 J	1.9 J	---	---	---	---	---	---
Manganese	315	154	10900	15100	1560	1280	14000	11900	7530	8540	2090	2340
Nickel	28.7 J	10.7 J	22.6 J	27.3	15.1 J	19.8 J	9.9 J	23.2	9.9 J	21.7	5.1 J	6.1 J
Selenium	---	---	---	---	---	---	3.2 J	---	---	---	---	---
Silver	---	---	---	---	---	---	---	---	---	---	---	---
Thallium	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	1.0 J	1.6 J	1.5 J	1.5 J	2.0 J	1.4 J	1.2 J	---	2.2 J	2.1 J	1.4 J	---
Zinc	178	36.4	196	20.4	35.8	37.3	24.1	19.7 J	28.3	13.1 J	24.9	22.6
Calcium	20800	18300	161000	174000	174000	170000	192000	19400	173000	173000	24800	32900
Magnesium	4230 J	3670	49600	64100	76100	74700	74500	76500	64800	65300	9520	12400
Potassium	3740 J	4480	7950	5350	13900	12900	5820	6920	4060 J	4690	28800	21400
Sodium	4470 J	3660	82800	81000	31000	28300	62600	72600	19000	20200	162000	72600
Mercury	---	---	---	---	---	---	---	---	---	---	---	---
Cyanide (ug/L)												
	---	---	---	---	---	---	---	---	---	---	---	---
Total Dissolved Solids (mg/L)												
	119	115	1020	1230	891	872	1060	1080	1050	1000	627	349

--- Not Detected Above the CRDL
J - Estimated value detected below CRDL
* Presence of elemental interference during analysis

6 µg/L, during the first and second round of sampling, respectively. Bis(2-ethylhexyl) phthalate was also detected at low levels in a sample collected from WM-3S, and in samples collected from WM-4S and WM-5S. 4-methylphenol was detected in a sample collected from WM-6S at 6 µg/L during the second round of sampling. This compound was detected at 2 µg/L (estimated concentration) during the first round of sampling.

No pesticides or Polychlorinated Biphenyls (PCBs) were detected in samples collected from the shallow wells during either round of sampling.

Between fourteen and sixteen metal species were detected in samples collected from the shallow wells during the first round of sampling. All metal species detected in the shallow wells were below the federal MCL. The number and concentration of metal species detected in samples collected during the second round of sampling were all within the same order of magnitude of the values identified in samples collected from the first round of sampling.

In a sample collected from WM-1S antimony was not detected in the sample collected during the first round of sampling. Cadmium, detected during the first round of sampling, was not detected in the second round of sampling. In a sample collected from WM-2S, the concentrations of some metals species increased while others decreased. Lead was detected at a low concentration (1.6 µg/L estimated concentration) in a sample collected from WM-2S during the second round of sampling, however it was not detected during the first round of sampling. Most of the metals species detected in a sample collected from WM-3S slightly increased in concentration during the second round of sampling, however the concentration of iron decreased from 56,600 µg/L to 5180 µg/L. This significant decrease in iron concentration between the first and second round of sampling was also observed in samples collected from wells WM-4S, WM-5S, and WM-6S. In a sample collected from WM-4S, low levels of selenium and vanadium were detected during the first round of sampling, however they were not detected during the second round of sampling. In a sample collected from WM-5S, antimony was detected at 3.1 µg/L (estimated concentration) during the second round of sampling, but was not detected during the first round of sampling. In a sample collected from WM-6S vanadium was detected during the first round of sampling, but was not detected during the second round of sampling.

Cyanide was not detected in samples collected from the shallow wells in either round of sampling. Total dissolved solids (TDS) detected in samples collected from the second

round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 115 mg/L to 1,230 mg/L in samples collected from the shallow wells during the second round of sampling.

3.1.2 Intermediate Water-bearing Zone

Field measurements of water quality parameters collected from the intermediate wells during the May 1994 sampling event (second round of sampling) are presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the intermediate wells ranged from 6.52 units in WM-3M to 7.19 units in WM-5M. The Eh of the groundwater ranged from -108 mV in WM-6M to -164 mV in WM-5M. Specific conductivity ranged from 477 mS/cm in WM-1M to 1442 mS/cm in WM-3M. Dissolved oxygen ranged from 0.8 mg/L in WM-6M to 4.5 mg/L in WM-2M. Turbidity ranged from 2.6 NTUs in WM-3M to 14 NTUs in WM-1M. The average groundwater temperature was 16.3 degrees celsius, which is 2.5 degrees warmer than the average temperature computed for the March 1994 sampling event (first round of sampling).

The results of the groundwater samples collected from the intermediate wells during the second round of sampling are presented in Table 3-3. The results of the groundwater samples collected from the intermediate wells during the first round of sampling are also shown on this table for comparison between the two sampling rounds. Chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

During the second round of sampling the following compounds were detected in a sample collected from WM-1M at concentrations similar to those observed during the first round of sampling of groundwater sampling: benzene, chlorobenzene, chloroethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, trans-1,2-dichloroethene, toluene, and xylene. During the first round of sampling, benzene and 1,4-dichlorobenzene were detected at 32 µg/L and 78 µg/L, respectively. Both of these concentrations exceeded the federal MCLs of 5 µg/L and 75 µg/L, respectively. During the second round of sampling benzene was detected at 23 µg/L, above the federal MCL, however 1,4-dichlorobenzene was detected at 51 µg/L, below the federal MCL. Additional compounds detected in well WM-1M during the second round of sampling include the following: carbon disulfide (5 µg/L) (estimated concentration), 1,1-dichloroethane (0.2 µg/L) (estimated concentration), and ethylbenzene (0.1 µg/L) (estimated concentration). Vinyl

Table 3-3
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Intermediate Water-bearing Zone
March and May 1994

Well ID:	WM -1M March	WM -1M May	WM -2M March	WM -2M May	WM -3M March	WM -3M May	WM -4M March	WM -4M May	WM -5M March	WM -5M May	WM -6M March	WM -6M May
Volatiles Organic Compounds (µg/L)												
Acetone	---	---	---	---	---	---	---	---	---	---	---	---
Benzene	32	23	---	---	---	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---	---	---	---	---	---
Carbon Disulfide	---	5 J	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	300	310	---	---	---	---	---	---	---	---	---	3 J
Chloroethane	4	4	---	---	---	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichlorobenzene	32	18	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	9 J	9 J	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	78	51	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	---	2 J	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	---	---	---	---	4 J	6 J	---	---	---	---	---	---
trans-1,2-Dichloroethene	2	1	2	---	---	---	---	---	---	---	---	---
Ethylbenzene	---	1 J	---	---	---	---	---	---	---	---	---	---
Toluene	2	1	---	---	---	1 J	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl Chloride	8 J	---	---	---	2	2	---	---	---	---	---	---
Xylene	3	2	---	---	---	---	---	---	---	---	---	---
Semivolatile Organic Compounds (µg/L)												
Acenaphthene	---	---	---	---	---	---	---	---	---	---	---	---
Bis(2-Ethylhexyl)Phthalate	---	---	---	2 J	---	16	---	---	---	---	---	5 J
Phenol	---	2 J	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	---	5 J	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	---	1 J	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	---	---	---	---	---	---	---	9 J	---	---	---	---
Pesticides (µg/L)												
PCBs (µg/L)	---	---	---	---	---	---	---	---	---	---	---	---

--- Not Detected Above the CRDL.
J - Estimated value detected below CRDL
*Presence of elemental interference during analysis

Table 3-3
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Intermediate Water-bearing Zone
March and May 1994

Well ID:	WM-1M March	WM-1M May	WM-2M March	WM-2M May	WM-3M March	WM-3M May	WM-4M March	WM-4M May	WM-5M March	WM-5M May	WM-6M March	WM-6M May
Metals (Total) (µg/L)												
Aluminum	156 J	125 J	143 J	68.5 J	98.4 J	46.1 J	19.5 J	22.0 J	33.9 J	45.9 J	48.5 J	102 J
Antimony	--	--	--	--	4.5 J	--	--	--	--	--	--	--
Arsenic	7.2 J	9.1	27.5	29.6	2.9 J	10.2	103	131	56.2	56.3	28.4	38.2
Barium	452	520	1360	1350	603	674	967	1120	699	705	382	410
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	2.2 J	2.9 J	3.3 J	3.9	5.9 J	4.4 J	2.3 J	--	2.3 J	--	7.6 J	2.2 J
Cobalt	2.2 J	2.8 J	9.2 J	8.7	2.9 J	3.6 J	8.1 J	9.5 J	3.4 J	2.8 J	2.5 J	3.1 J
Copper	4.5 J	1.8 J	1.8 J	1.6	2.1 J	2.9 J	1.3 J	1.1 J	1.6 J	1.2 J	2.9 J	1.5 J
Iron	51600	57700	79400	7760	52300	2560	56800	5460	24600	2220	34700	3570
Lead	2.0 J	--	--	--	--	--	--	--	--	--	--	--
Manganese	7730	7610	1950	1860	598	634	177	131	332	295	789	758
Nickel	3.9 J	7.3 J	7.3 J	12.2 J	7.1 J	14 J	10.2 J	15.7 J	4.4 J	6.6 J	16.3 J	5.5 J
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	1.1 J	1.1 J	1.6 J	--	3.4 J	3 J	--	--	--	--	--	--
Zinc	233	12.2 J	9.3 J	15.4 J	32.0	37.1	18.2 J	14.9 J	18.9 J	22	48.7	16.8 J
Calcium	39300	39400	88300	87200	107000	109000	73100	71700	39500	39000	26300	23500
Magnesium	22500	23900	41700	43000	51500	53000	39000	39100	34600	34700	15800	16000
Potassium	3310 J	4140	4270 J	5220	7570	8160	6620	7640	5130	6670	2940 J	3620
Sodium	67800	74100	18600	19900	21500	23200	21400	19400	20200	21500	23300	25200
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (ug/L)												
	--	--	--	--	--	--	--	--	--	--	--	--
Total Dissolved Solids (mg/L)												
	422	408	492	509	605	644	429	442	336	280	271	210

-- -- Not Detected Above the CRDL.
J - Estimated value detected below CRDL.
*Presence of elemental interference during analysis

chloride was detected during the first round of sampling, but was not detected during the second round of sampling. In a sample collected from WM-3M during the first and second round of sampling, concentrations of cis-1,2-dichloroethene and vinyl chloride were similar to those detected during the first round of sampling. Vinyl chloride was detected in a sample collected from WM-3M at the federal MCL level of 2 µg/L in both rounds. Low levels of chloroform and carbon disulfide were detected in a sample collected from WM-5M and WM-6M. VOCs were not detected in samples collected from WM-2M and WM-4M.

No SVOCs were detected above the federal MCLs in samples collected from the intermediate wells during the second round of sampling. SVOCs were not detected in samples collected from WM-5M. Acenaphthene was detected in a sample collected from WM-6M at 5 µg/L (estimated concentration). SVOCs detected in samples collected from WM-1M during the second round of sampling include phenol (2 µg/L estimated concentration), 2-chlorophenol (5 µg/L estimated concentration), and 2,4-dichlorophenol (1 µg/L estimated concentration). No SVOCs were detected in WM-1M during the first round of groundwater sampling. Bis(2-ethylhexyl)phthalate was detected in samples collected from WM-2M and WM-3M at 2 µg/L (estimated concentration) and 16 µg/L, respectively. Bis(2-ethylhexyl)phthalate was not detected in these two wells during the first round of sampling. 4-methylphenol was detected in a sample collected from WM-4M at 0.9 µg/L (estimated concentration). This compound was not detected in this well during the first round of sampling.

No pesticides or PCBs were detected in samples collected from the intermediate wells during the first or second round of sampling.

Between 13 and 15 metal species were detected in samples collected from the intermediate wells during the second round of sampling. Of these species only arsenic was detected at levels above the federal MCL in samples collected from WM-4M and WM-5M. The federal MCL for arsenic is 50 µg/L. In samples collected from WM-4M arsenic was detected at 103 µg/L and 131 µg/L during the first and second round of sampling, respectively. Arsenic was detected at 56.2 µg/L and 56.3 µg/L in samples collected from WM-5M, during the first and second round of sampling, respectively.

A sample collected from WM-1M indicated the presence of lead at a low concentration during the first round of sampling, however it was not detected during the second round of sampling. In a sample collected from WM-2M vanadium was detected during the first

round of sampling, but not detected during the second round of sampling. The concentration of iron decreased by one order of magnitude from 79,400 µg/L to 7,760 µg/L. This was also observed in wells WM-3M, WM-4M, WM-5M, and WM-6M. Antimony was detected in a sample collected from WM-3M at a low concentration during the first round of sampling but was not detected during the second round of sampling. In WM-4M and WM-5M chromium was detected at low concentrations during the first round of sampling but was not detected during the second round of sampling.

Cyanide was not detected in samples collected from the intermediate wells in either round of sampling. Total dissolved solids (TDS) measured in samples collected from the second round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 210 mg/L to 644 mg/L in samples collected from the intermediate wells during the second round of sampling.

3.1.3 Deep Water-bearing Zone

Field measurements of water quality parameters collected from the deep wells during the second round of sampling are presented in Table 3-1. During the second round of sampling the pH of the groundwater collected from the deep wells ranged from 5.88 units in WM-2D to 8.23 units in WM-5D. The Eh of the groundwater ranged from -142 mV in WM-5D to 220 mV in WM-2D. Specific conductivity ranged from 59 mS/cm in WM-2D to 510 mS/cm in WM-6D. Dissolved oxygen ranged from 1.3 mg/L in WM-5D to 3.0 mg/L in WM-2D. Turbidity ranged from 32 NTUs in WM-6D to >200 NTUs in WM-1D, WM-4D, and WM-5D. The average groundwater temperature was 15.0 degrees celsius, which is 1.3 degrees warmer than the average temperature computed for the March 1994 sampling event.

The results of the groundwater samples collected from the deep wells during the second round of sampling are presented in Table 3-4. The results of the groundwater samples collected from the deep well during the first round of sampling are also included in this table for comparison between the two rounds. The chain-of-custody records are presented in Appendix C. The laboratory data summary reports are presented in Appendix D.

No VOCs were detected above federal MCL levels in samples collected from deep wells during the second round of sampling. In a sample collected from WM-1D, bromodichloromethane was detected at 0.4 µg/L (estimated concentrations), similar to the

Table 3-4
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Deep Water-bearing Zone
March and May 1994

Well ID:	WM-1D March	WM-1D May	WM-2D March	WM-2D May	WM-3D March	WM-3D May	WM-4D March	WM-4D May	WM-5D March	WM-5D May	WM-6D March	WM-6D May
Volatiles Organic Compounds ($\mu\text{g/L}$)												
Acetone	---	---	---	---	---	---	---	---	---	35	---	---
Benzene	---	---	---	---	---	---	---	---	---	---	---	---
Bromochloromethane	3 J	.4 J	.1 J	.1 J	---	---	.2 J	.4 J	---	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---	.2 J	---	---	---	.7 J
Chlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---
Chloroethane	---	---	---	---	---	---	---	---	---	---	---	---
Chloroform	.6 J	---	1	---	3 J	---	1.0	---	.5 J	.5 J	.4 J	---
Dibromochloromethane	---	---	---	---	---	---	---	.2 J	---	---	---	---
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---
Ethylbenzene	---	---	---	---	---	---	---	---	---	---	---	---
Toluene	.1 J	---	---	---	---	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	.9 J	.1 J	.1 J	.2 J	.3 J	---	---	---	---	---	---
Vinyl Chloride	---	---	---	---	---	---	---	---	---	---	---	---
Xylene	---	---	---	---	---	---	---	---	---	---	---	---
Semivolatile Organic Compounds ($\mu\text{g/L}$)												
Acenaphthene	---	---	---	---	---	---	---	---	---	---	---	---
Bis(2-Ethylhexyl)Phthalate	---	---	---	.1 J	---	---	---	.4 J	---	---	---	---
Phenol	---	---	---	---	---	---	---	---	---	---	---	---
2-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	---
2,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	---	---	---	---	---	---	---	---	---	---	---	---
Pesticides ($\mu\text{g/L}$)												
PCBs ($\mu\text{g/L}$)	---	---	---	---	---	---	---	---	---	---	---	---

--- Not Detected Above the CRDL
J - Estimated value detected below CRDL
* Presence of elemental interference during analysis

Table 3-4
Enterprise Avenue Landfill
Summary of Organic and Inorganics Detected in Deep Water-bearing Zone
March and May 1994

Well ID:	WM-1D March	WM-1D May	WM-2D March	WM-2D May	WM-3D March	WM-3D May	WM-4D March	WM-4D May	WM-5D March	WM-5D May	WM-6D March	WM-6D May
Metals (Total) (µg/L)												
Aluminum	90.1 J	1910	318	89.2 J	1230	1370	6380	817	1510	4480	400*	81.4 J
Antimony	---	---	---	---	---	---	---	---	---	---	---	---
Arsenic	2.9 J	---	---	---	---	---	---	---	2.9 J	---	3.5 J	---
Barium	23.5 J	28.4	47.6 J	27.8	48.4 J	43.6	99.6 J	32	25.1 J	112	59.7 J	56
Beryllium	---	---	---	---	2.6 J	---	5.2	---	---	2.1	---	---
Cadmium	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	5.1 J	3.4 J	5.5 J	---	11.7	8.8 J	19.5	5.6 J	18.5	33.4	7.4 J	2.4 J
Cobalt	---	2.6 J	9.9 J	5.9 J	8.3 J	4.3 J	9.0 J	1.8 J	2.1 J	25.4 J	4.4 J	18.3 J
Copper	5.5 J	8.7 J	17.4 J	8 J	33.9	11.1	80.7	13.5	9.8 J	76.4	4.7 J	8.6 J
Iron	286	518	420	129	1410	1080	5190	804	1110	6450	723	365
Lead	1.5 J	1.5 J	1.1 J	1.4 J	6.7	2.5	9.2	2.2	2.0 J	7.8	---	1.3 J
Manganese	8.5 J	31.4	107	53.9	54.7	49.7	112	53.4	13.4 J	218	1720	5400
Nickel	3.9 J	7.3 J	12.8 J	13 J	19.3 J	12.6 J	33.6 J	16 J	8.9 J	52.9	9.6 J	12.2 J
Selenium	---	---	---	---	---	---	---	---	---	---	---	---
Silver	---	---	---	---	---	---	---	---	---	---	---	---
Thallium	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	47.7 J	12.9	2.9 J	1.1 J	18.7 J	8.7 J	24.0 J	8.6 J	38.9 J	70.7	24.3 J	6.4 J
Zinc	49.8	51.4	72.6	66	64.9	58.2	261	68.3	22.4	230	29.2	59
Calcium	40100	27100	17800	12500	13600	14300	22900	18200	30000	74600	50400	46600
Magnesium	5160	5660	5000	4950	4650 J	5000	5290	4040	2710 J	6990	16200	17000
Potassium	3540 J	3430	2740 J	2910	3020 J	4440	3750 J	3290	3940 J	5230	4110 J	3290
Sodium	22300	24300	24200	26000	34900	85700	37800	39100	32700	39600	31000	30000
Mercury	---	---	---	---	---	---	---	---	---	---	---	---
Cyanide (ug/L)												
---	---	---	---	---	---	---	---	---	---	---	---	---
Total Dissolved Solids (mg/L)	195	176	152	134	244	313	231	189	178	220	274	260

--- Not Detected Above the CRDL
J - Estimated value detected below CRDL
* Presence of elemental interference during analysis

concentration observed during the first round of sampling. One additional compound, 1,1,1-trichloroethane, was detected in this well at 0.9 µg/L (estimated concentration). Toluene and chloroform, observed during the first round of sampling at low concentrations, were not observed during the second round of sampling. Concentrations of bromodichloromethane and 1,1,1-trichloromethane were detected in WM-2D at 0.1 µg/L (estimated concentration) which is the same as concentrations observed in this well during the first round of sampling. Chloroform was detected in WM-2D at a low concentration during the first round of sampling, but was not detected during the second round of sampling. In WM-3D the only compound detected was 1,1,1-trichloroethane at an estimated concentrations of 0.3 µg/L, similar to the concentration of this compound detected during the first round of sampling. Dibromochloromethane, which was detected in WM-3D during the first round of sampling, was not detected during the second round of sampling. In WM-4D, bromodichloromethane was detected at 0.4 µg/L (estimated concentration) during the second round of sampling which is similar to the concentration that was detected in the first round of sampling. Carbon disulfide and dibromochloromethane were detected during the second round of sampling but were not detected during the first round of sampling. Both of these compounds were detected at estimated concentration of 0.2 µg/L. Chloroform, which was detected at a low concentration during the first round of sampling, was not detected during the second round of sampling in this well. In WM-5D chloroform, present during the first round of sampling, was observed again during the second round of sampling at 0.5 µg/L (estimated concentrations). Acetone was detected in a sample collected from WM-5D at 35 µg/L. Acetone was not detected in the first round of sampling sample collected from WM-5D which suggests that the presence of this compound may be attributed to laboratory contamination. In sample collected from WM-6D, carbon disulfide was detected at 0.7 µg/L (estimated concentration). Carbon disulfide was not detected in the first round of sampling. Chloroform was detected in a sample during the first round of sampling, however it was not observed during the second round of sampling.

No SVOCs were detected above the federal MCLs in samples collected from the deep wells during the second round of sampling. SVOCs were not detected in samples collected from wells WM-1D, WM-3D, WM-5D, or WM-6D. Bis(2-ethylhexyl)phthalate was the only SVOC detected in WM-2D and WM-4D at 1 µg/L and 4 µg/L (estimated concentrations), respectively. Bis(2-ethylhexyl)phthalate was not observed in these wells during the first round of sampling.

No pesticides or PCBs were not detected in samples collected from the deep wells during either round of groundwater sampling.

Between 13 and 15 metal species were detected in samples collected from the deep wells during the second round of sampling. No metal species were detected above the federal MCL. Beryllium was detected at 5.2 µg/L (above the federal MCL of 4 µg/L) in a sample collected from WM-4D during the first round of sampling, however it was not detected during the second round of sampling. In samples collected WM-3D beryllium was also detected during the first round of sampling at 2.6 µg/L (estimated concentration), however it was not detected during the second round of sampling. In samples collected from wells WM-1D, WM-5D, and WM-6D, arsenic was detected at low concentrations during the first round of sampling, but was not detected during the second round of sampling. Cobalt was detected in WM-1D during the second round of sampling at 2.6 µg/L (estimated concentration), was not detected during the first round of sampling. A sample collected from WM-2D showed the presence of chromium at a low concentration during the first round of sampling, however it was not detected during the second round of sampling. In a sample collected from WM-6D lead was not detected during the first round of sampling, but was detected during the second round of sampling at 1.3 µg/L (estimated concentration).

Cyanide was not detected in samples collected from the deep wells in either round of sampling. Total dissolved solids (TDS) detected in samples collected from the second round of sampling were within the same order of magnitude as TDS levels detected in samples collected during the first round of sampling. TDS ranged from 134 mg/L to 313 mg/L in samples collected from the deep wells during the second round of sampling. The average groundwater temperature was 15.0 degrees celsius, which is 1.3 degrees warmer than the average temperature computed for the March 1994 sampling event.

4.0 CONCLUSIONS

4.1 SHALLOW WATER-BEARING ZONE

- Three VOCs and three SVOCs were detected at low concentrations in samples collected from the shallow wells. All compounds were detected at concentrations below federal MCLs.

- Between 14 and 16 metal species were detected in samples collected from the shallow wells. All metal species were detected at concentrations below the federal MCLs.

4.2 INTERMEDIATE WATER-BEARING ZONE

- Fifteen VOCs and six SVOCs were detected at low concentrations in samples collected from the intermediate wells. Benzene was the only compound detected above the federal MCL at 23 µg/L in well MW-1M. Benzene was also detected in MW-1M above the federal MCL during the first round of sampling. The federal MCL for benzene is 5 µg/L. 1,4-dichlorobenzene, which was detected above the federal MCL during the first round of sampling, was detected during the second round of sampling, but below the federal MCL.
- Between 13 and 15 metal species were detected in samples collected from the intermediate wells. Arsenic was detected in samples collected from wells WM-4M and WM-5M at concentrations slightly above the federal MCL.

4.3 DEEP WATER-BEARING ZONE

- Six VOCs and one SVOC were detected at low concentrations in samples collected from the deep wells. All compounds were detected at concentrations well below the federal MCLs.
- Between 13 and 15 metal species were detected in samples collected from the deep wells. No metals were detected above the federal MCL.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study.

This section describes the data collection methods, the sample size, and the statistical analysis techniques used. It also discusses the limitations of the study and the potential sources of error.

The third part of the report presents the results of the study. It includes a summary of the findings and a discussion of the implications of the results.

3. The fourth part of the report is a conclusion and a list of references.

The conclusion summarizes the main findings of the study and provides a final statement on the importance of the research.

The list of references includes all the sources used in the study, providing a comprehensive overview of the literature on the subject.

APPENDIX A

TCL AND TAL COMPOUND LIST

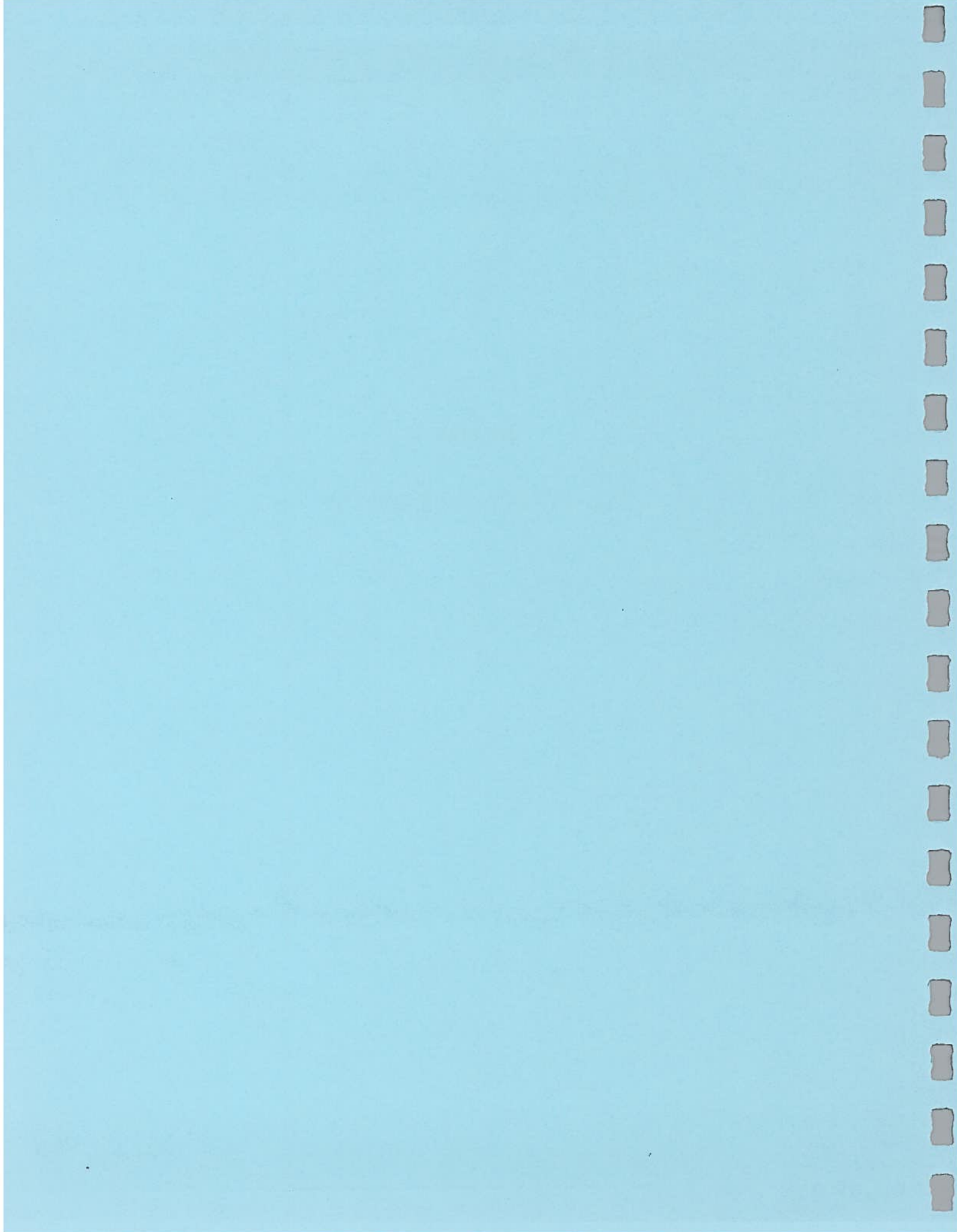


Table A

Organics		
TCL Compound List		
Volatiles	Semivolatiles	Pesticides
Chloromethane	Phenol	Alpha-BHC
Bromomethane	bis(2-Chloroethyl) ether	Beta-BHC
Vinyl Chloride	2-Chlorophenol	Delta-BHC
Chloroethane	2-Methylphenol	Gamma-BHC (Lindane)
Methylene Chloride	2,2'-oxybis(1-Chloropropane)	Heptachlor
Acetone	4-Methylphenol	Aldrin
Carbon Disulfide	N-Nitroso-di-n-propylamine	Heptachlor Epoxide
1,1-Dichloroethene	Hexachloroethane	Endosulfan I
1,1-Dichloroethane	Nitrobenzene	Dieldrin
cis-1,2-Dichloroethene	Isophorone	4,4'-DDE
trans-1,2-Dichloroethene	2-Nitrophenol	Endrin
Chloroform	2,4-Dimethylphenol	Endosulfan II
1,2-Dichloroethane	bis(2-Chloroethoxy) methane	4,4'-DDD
2-Butanone	2,4-Dichlorophenol	Endosulfan Sulfate
Bromochloromethane	1,2,4-Trichlorobenzene	4,4'-DDT
1,1,1-Trichloroethane	Naphthalene	Methoxychlor
Carbon Tetrachloride	4-Chloroaniline	Endrin Ketone
Bromodichloromethane	Hexachlorobutadiene	Endrin Aldehyde
1,2-Dichloropropane	4-Chloro-3-methylphenol	alpha-Chlordane
cis-1,3-Dichloropropene	2-Methylnaphthalene	gamma-Chlordane
Trichloroethene	Hexachlorocyclopentadiene	Toxaphene
Dibromochloromethane	2,4,6-Trichlorophenol	
1,1,2-Trichloroethane	2,4,5-Trichlorophenol	
Benzene	2-Chloronaphthalene	
trans-1,3-Dichloropropene	2-Nitroaniline	
Bromoform	Dimethylphthalate	Aroclor-1016
4-Methyl-2-Pentanone	Acenaphthylene	Aroclor-1221
2-Hexanone	2,6-Dimethyltoluene	Aroclor-1232
Tetrachloroethene	3-Nitroaniline	Aroclor-1242
1,1,2,2-Tetrachloroethane	Acenaphthene	Aroclor-1248
1,2-Dibromoethane	2,4-Dinitrophenol	Aroclor-1254
Toluene	4-Nitrophenol	Aroclor-1260
Chlorobenzene	Dibenzofuran	
Ethyl Benzene	2,4-Dimethyltoluene	
Styrene	Diethylphthalate	
Total Xylenes	4-Chlorophenyl-Phenylether	
1,3-Dichlorobenzene	Fluorene	
1,4-Dichlorobenzene	4-Nitroaniline	
1,2-Dichlorobenzene	4,6-Dinitro-2-Methylphenol	
1,2-Dibromo-3-chloropropane	N-Nitrosodiphenylamine	
	4-Bromophenyl-Phenylether	
	Hexachlorobenzene	
	Pentachlorophenol	
	Phenanthrene	
	Anthracene	
	Di-n-Butylphthalate	
	Fluoranthene	
	Pyrene	
	Butylbenzylphthalate	
	3,3-Dichlorobenzidine	
	Benzo(a)Anthracene	
	Chrysene	
	Bis(2-Ethylhexyl) Phthalate	
	Di-n-octyl Phthalate	
	Benzo(b)Fluoranthene	
	Benzo(k)Fluoranthene	
	Benzo(a)Pyrene	
	Indeno(1,2,3-cd)Pyrene	
	Dibenz(a,h)Anthracene	
	Benzo(g,h,i)Perylene	

Table A (Continued)

Inorganics		
Cyanide		
Total Dissolved Solids		
TAL Metals		
Aluminum		
Antimony		
Arsenic		
Barium		
Beryllium		
Cadmium		
Calcium		
Chromium		
Cobalt		
Copper		
Iron		
Lead		
Magnesium		
Manganese		
Mercury		
Nickel		
Potassium		
Selenium		
Silver		
Sodium		
Thallium		
Vanadium		
Zinc		

APPENDIX B

GROUNDWATER SAMPLING SUMMARY

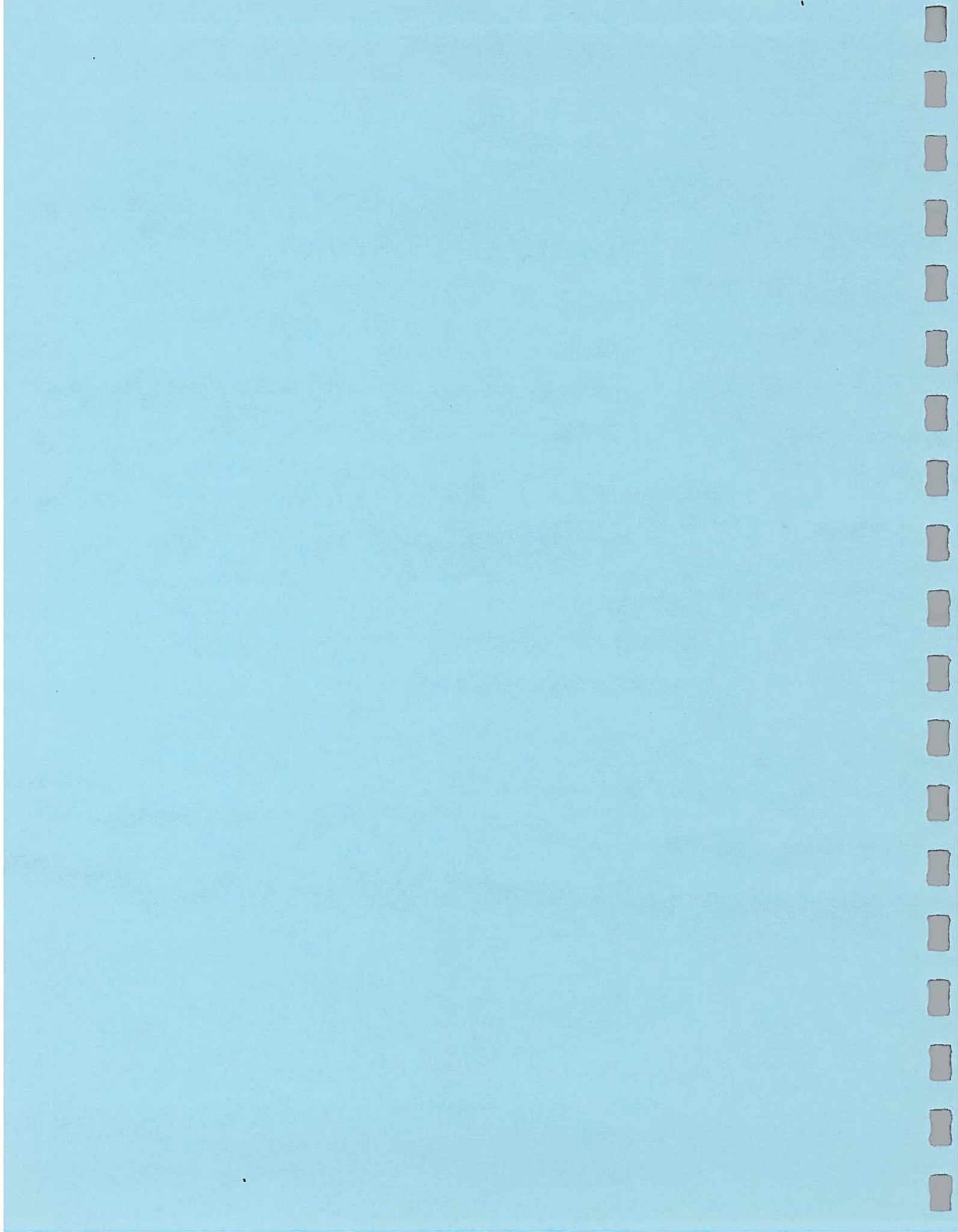


Table B

Enterprise Avenue Landfill
Phase 1 Groundwater Sampling Summary - May 1994
Stabilized Field Measurements at End of Low-Flow Purging

Well ID	Sample		Water Quality Parameters						Final Depth to Water (ft/TOIC)	Purge Rate (Lpm)	Bottom of Pump Setting * (ft/TOIC)	Well Total Depth (ft/TOIC)
	Date	Time	Identification	Temp (C)	Specific Conductance (mS/cm)	pH (ATC)	Eh (mv)	Dissolved Oxygen (mg/L)				
WM-1S	05-May-94	1150	2-GW-WM-1S	18.1	188	4.52	358	5.1	9	0.15	15.0	17.70
WM-1M	05-May-94	1150	2-GW-WM-1M	17.0	477	6.84	-128	2.2	14	0.35	35.0	42.20
Duplicate			2-DP-WM-1M									
WM-1D	05-May-94	1600	2-GW-WM-1D	15.1	311	6.95	10	2.2	>200	0.45	122.5	130.50
WM-2S	05-May-94	945	2-GW-WM-2S	16.6	2040	6.52	-68	2.1	6.96	0.4	21.5	29.00
WM-2M	02-May-94	1715	2-GW-WM-2M	17.5	903	6.67	-121	4.5	5.2	0.5	43.0	49.00
WM-2D	02-May-94	1615	2-GW-WM-2D	16.4	59	5.88	220	3.0	34	0.475	106.0	116.60
WM-3S	02-May-94	1115	2-GW-WM-3S	16.6	1956	6.77	-121	2.8	11	0.45	25.0	32.00
WM-3M	02-May-94	1055	2-GW-WM-3M	16.3	1442	6.52	-137	1.7	2.6	0.6	42.0	49.00
WM-3D	02-May-94	1320	2-GW-WM-3D	15.7	324	6.28	168	2.0	179	0.6	123.0	132.65
MS/MSD	- except cyanide											
WM-4S	03-May-94	1205	2-GW-WM-4S	18.2	2020	6.44	-116	1.4	40.8	0.2	15.0	22.50
WM-4M	03-May-94	1030	2-GW-WM-4M	16.0	876	6.87	-123	1.6	3	0.5	49.0	56.00
WM-4D	03-May-94	1000	2-GW-WM-4D	14.6	311	6.73	130	2.9	>200	0.325	128.0	135.00
MS/MSD	- only cyanide											
WM-5S	04-May-94	1110	2-GW-WM-5S	13.2	1582	6.42	-94	2.3	59.3	0.4	15.0	21.80
WM-5M	04-May-94	1045	2-GW-WM-5M	14.7	803	7.19	-164	1.4	8	0.475	45.0	51.50
WM-5D	04-May-94	1300	2-GW-WM-5D	13.9	332	8.23	-142	1.3	>200	1.05	135.0	142.20
WM-6S	04-May-94	1545	2-GW-WM-6S	15.0	723	6.63	-123	1.2	3.1	0.5	18.0	27.10
WM-6M	03-May-94	1530	2-GW-WM-6M	16.1	511	6.95	-108	0.8	4.03	0.6	44.0	52.20
WM-6D	03-May-94	1510	2-GW-WM-6D	14.4	510	6.51	93	2.4	32	0.3	105.0	115.90

(ft/TOIC) Feet from top of inner casing
 Approximate Setting

C - Degrees Celsius
 mS/cm - Millisiemens/centimeter
 ATC - pH units adjusted for temp

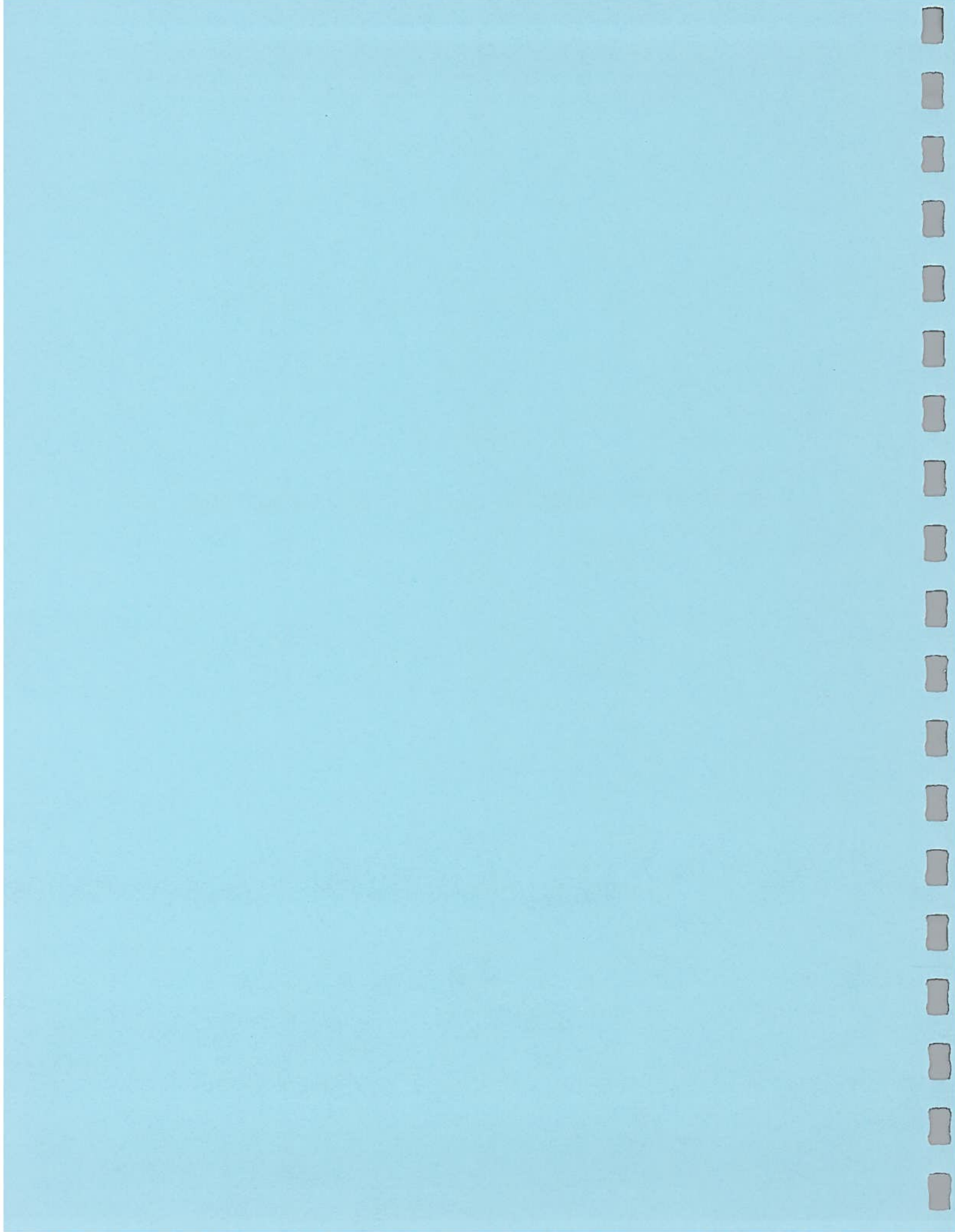
mV - Millivolts
 mg/L - Milligrams/Liter
 NTU's - National Turbidity Units

WM well total depth measurements have been calculated using construction depth and field measured stick up.
 PA DER / EPA split samples collected at WM-1M, WM-2S, WM-5M, and WM-6S.

Lpm - Liters per minute
 mHz - Millihertz
 >200 - Greater than instrument's range

APPENDIX C

GROUNDWATER SAMPLING CHAIN-OF-CUSTODY RECORDS





4405L449

Custody Transfer Record/Lab Work Request

Client	TEB - Enterprise Ave. Landfill	Refrigerator #	
Est. Final Proj. Sampling Date	05-07-94	#/Type Container	Liquid 1 481A 2A
Work Order #	10235-1201-001-0070-02	Volume	1.2 L 250 ml
Project Contact/Phone	815-287-815-0878	Preservatives	HCl 100% 20%
AD Project Manager	Special Del. 30 days	ANALYSES REQUESTED	↓
Date Rec'd	5/3/94	DATE DUE	6/3/94
Account #	TEB-041-30	WESTON Analytics Use Only	

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (v)	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only									
							MS	MSD	MSL	MSD	MSL	MSD	MSL	MSD	MSL	MSD
S - Soil	001	2-GW-WM-35 DM		W	5/2/94	1715										
SE - Sediment	002	2-GW-WM-2D		W	5/2/94	1615										
SO - Solid	003	2-GW-WM-4M		W	5/3/94	1030										
SL - Sludge	004	TRIP BLANK		W	5/3/94	1030										
W - Water																
O - Oil																
A - Air																
DB - Drum																
DL - Drum																
L - Leachate																
EP/CLP																
WI - Wipe																
X - Other																
F - Fish																

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS:
5497 1. MS/MSD on 057 except CN

WESTON Analytics Use Only

*Below Concentration Method
10/92 - Organic
10/91 - Inorganics

Relinquished by	Received by	Date	Time
B.M. Canner	5/3/94	1700	
IFB	5/4/94		

Relinquished by	Received by	Date	Time
IFB	5/4/94		

Discrepancies Between Samples Labels and COC Record? Y or N ☒ N

- Samples were:
- 1) Shipped ☒ 91
 - 2) Ambient or ☒ 91
 - 3) Received in Good Condition ☒ Y or N
 - 4) Labels Indicate Properly Preserved ☒ Y or N
 - 5) Received Within Holding Times ☒ Y or N
- COC Tape was:
- 1) Present on Outer Package ☒ Y or N
 - 2) Unbroken on Outer Package ☒ Y or N
 - 3) Present on Sample ☒ Y or N
 - 4) Unbroken on Sample ☒ Y or N
 - 5) COC Record Present Upon Sample Rec'd ☒ Y or N

94656449

Custody Transfer Record/Lab Work Request

Client	TCB - Enterprise Ave. Landfill	Refrigerator #	
Est. Final Proj. Sampling Date	05-07-94	#Type Container	Liquid 1603763/3
Work Order #	10535-001-001-0070-00	Volume	Liquid 1603763/3
Project Coordinator	(2) [Redacted]	Preservatives	None
AD Project Manager	By [Redacted]	ANALYSES REQUESTED	↓
QC	DAI 10/16/94 30 Day	ORGANIC	VOL BNA PEST PCB Herb
Date Rec'd	5/3/94	Metal	CN
Account #	5/3/94		

MATRIX CODES:	Lab ID	Client ID/Description	Matrix Chosen (✓)	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only				
							MS	MSD	MS	MSD	MS
S - Soil	005	2-GW-WM-35		W	5-2-94	11:5	✓	✓	✓	✓	✓
SE - Sediment	006	2-GW-WM-3M		W	5-2-94	10:55	✓	✓	✓	✓	✓
SO - Solid	007	2-GW-WM-3D	✓	W	5-2-94	13:40	✓	✓	✓	✓	✓
SL - Sludge	008	Tripe Blank		W	5-2-94	10:45	✓	✓	✓	✓	✓
W - Water				W	5-2-94	17:15	✓	✓	✓	✓	✓
O - Oil				W	5-2-94	10:15	✓	✓	✓	✓	✓
A - Air				W	5-2-94	10:15	✓	✓	✓	✓	✓
DS - Drum				W	5-2-94	10:15	✓	✓	✓	✓	✓
DL - Drum				W	5-2-94	10:15	✓	✓	✓	✓	✓
L - Liquids				W	5-2-94	10:15	✓	✓	✓	✓	✓
EPT/CLP Leachate				W	5-2-94	10:15	✓	✓	✓	✓	✓
WI - Waste				W	5-2-94	10:15	✓	✓	✓	✓	✓
X - Other				W	5-2-94	10:15	✓	✓	✓	✓	✓
F - Fish				W	5-2-94	10:15	✓	✓	✓	✓	✓

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS: 1

WESTON Analytics Use Only

Special Instructions:

Extra volume collected for MS/MSD except CN

* How concentration method for -

organics 10/92

inorganics 10/91

note: only 2 vs 3 MS/MSD collected for CN 3M

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
5/3/94 11:00	5/3/94 11:00			5/3/94 11:00	5/3/94 11:00		
5/4/94	5/4/94			5/4/94	5/4/94		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

5) Received Within Holding Times? Y or N

4) Labels Indicate Properly Preserved Y or N

3) Present on Sample Y or N

2) Unbroken on Package Y or N

1) Present on Outer Package Y or N

COC Tape was:

1) Shipped or Hand Delivered Airbill

2) Ambient or Limited Condition

3) Received in Good Condition

4) Labels Indicate Properly Preserved

5) Received Within Holding Times

94051449

Custody Transfer Record/Lab Work Request

Client <u>TCB - Enterprise Five Landfill</u>		Refrigerator #	Liquid		1	6	6	3	3	3	3	3
Est. Final Proj. Sampling Date <u>5/3/94</u>		#/Type Container	Solid		1	6	6	3	3	3	3	3
Work Order # <u>10535-001-001-0570-00</u>		Volume	Liquid		1	6	6	3	3	3	3	3
Project Contact/Phone <u>(845) 667-1111</u>		Preservatives	Solid		1	6	6	3	3	3	3	3
AD Project Manager <u>(845) 667-1111</u>		ANALYSES REQUESTED	Herb		1	6	6	3	3	3	3	3
QC <u>Del. 4/11/94</u>		DATE RECEIVED	Metal		1	6	6	3	3	3	3	3
Date Rec'd <u>5/3/94</u>		Account #	CN		1	6	6	3	3	3	3	3
Matrix CODES:		WESTON Analytics Use Only										
S - Soil		Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix Collected	Date Collected	Time Collected	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
SE - Sediment		009	0 - SW-WM-45		W	5/3/94	1205	X	X	X	X	X
SO - Solid		010	2 - SW-WM-45	X	W	5/3/94	1005	X	X	X	X	X
SL - Sludge												
W - Water												
O - Oil												
A - Air												
DS - Drum												
Solids												
DL - Drum												
Liquids												
L - EP/CLP												
Leachate												
WI - Wipe												
X - Other												
F - Fish												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS:

Special Instructions:

** Low Concentration Methods*

10/92 - Organics

10/91 - Inorganics

→ m/mso for cad only

Relinquished by	Received by	Date	Time
<i>SM</i>	<i>SM</i>	<i>5/3/94</i>	<i>1200</i>
<i>IF</i>	<i>IF</i>	<i>5/4/94</i>	

Relinquished by	Received by	Date	Time
<i>IF</i>	<i>IF</i>	<i>5-14-94</i>	

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

WESTON Analytics Use Only

Samples were:

1) Shipped or Hand Delivered or Airtail # 337

2) Ambient or Chilled or Condition Y or N

3) Received in Good Condition Y or N

4) Labels Indicate Properly Preserved Sample Y or N

5) Received Within Holding Times Y or N

COC Tape was:

1) Present on Outer Package Y or N

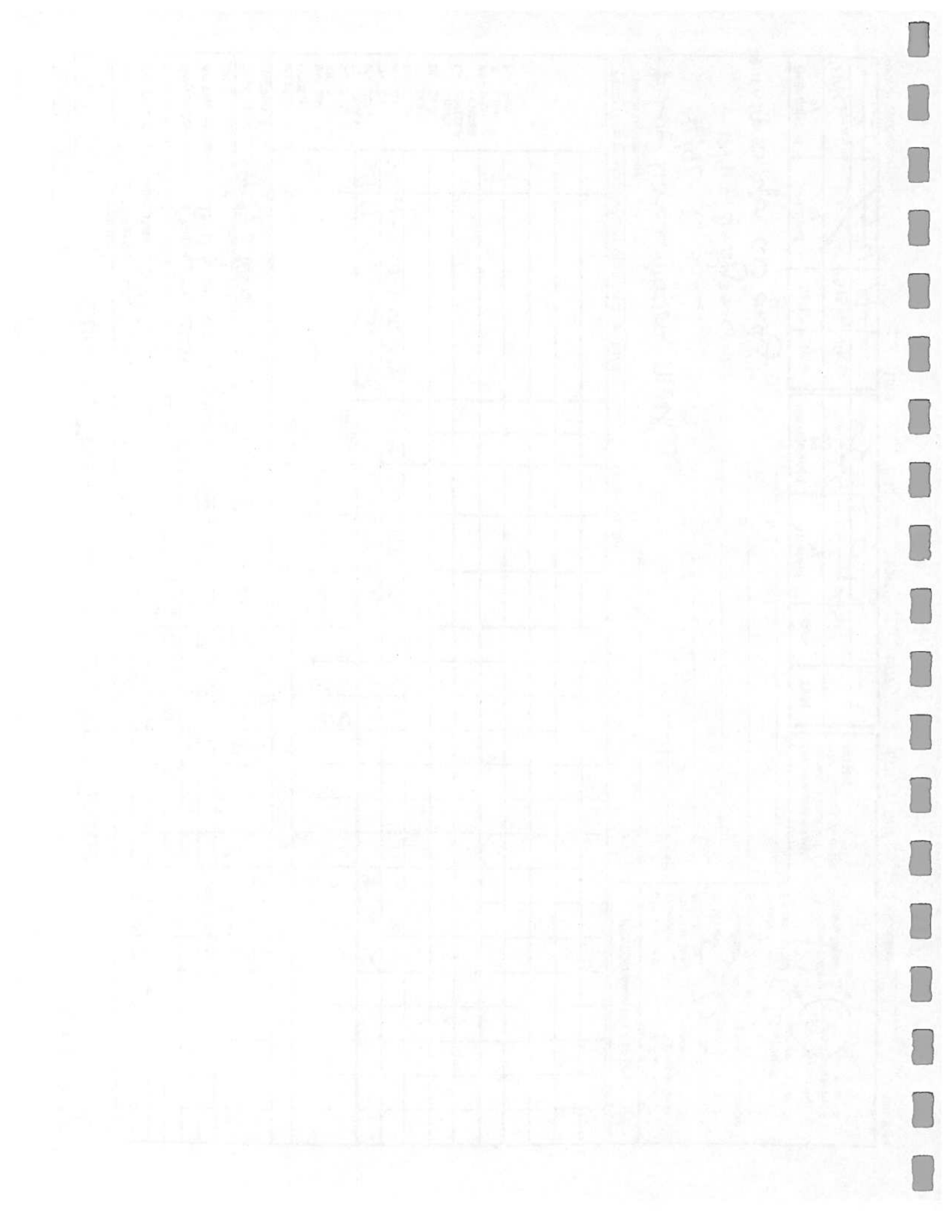
2) Unbroken on Outer Package Y or N

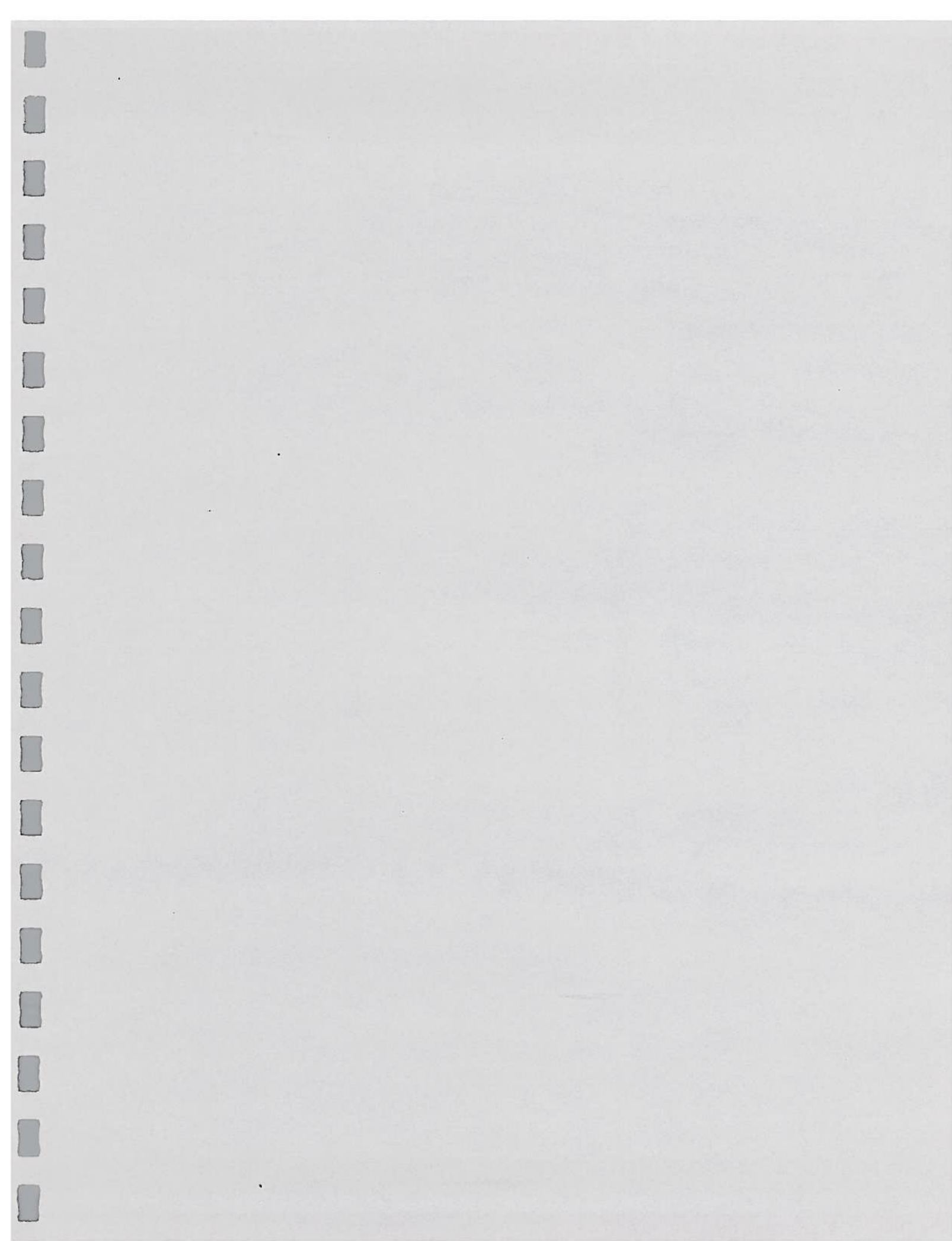
3) Present on Sample Y or N

4) Unbroken on Sample Y or N

5) Received Within Holding Times Y or N

COC Record Present Upon Sample Rec'l Y or N







WESTON Analytics Use Only

94056472

Custody Transfer Record/Lab Work Request

WESTON
Page 1 of 20

(m: nline
Ritter
2/1/04)

Client TEB - EAL
Est. Final Proj. Sampling Date 5-7-94
Work Order # 10535-001-001-0070
Project Contact/Phone (915) 889-8894
AD Project Manager (915) 889-8894
OC STB Del STB TAT 30 days
Date Rec'd 5-7-94 Date Due 6/7/94
Account # TEB-EAL-30

Refrigerator # 1
#/Type Container 1
Volume 100 ml
Preservatives None
ANALYSES REQUESTED ↓
VOA 1 BNA 1 Pest/PCB 1 Herb 1
Metal 1 INORG 1
WESTON Analytics Use Only

MATRIX CODES:	Lab ID	Client ID/Description	MATRIX OC Chosen (✓)	MATRIX MS MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only
S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - Liquids L - EPTCLP W - Waste X - Other F - Fish	001	8-624-WM-53	✓	MS	MSD	5/4/94	1110	✓
	002	8-624-WM-5M	✓	MS	MSD	5/4/94	1045	✓
	003	8-624-WM-5D	✓	MS	MSD	5/4/94	1300	✓
	004	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	005	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	006	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	007	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	008	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	009	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	010	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	011	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	012	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	013	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	014	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	015	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	016	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	017	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	018	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	019	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	020	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	021	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	022	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	023	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	024	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	025	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	026	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	027	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	028	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	029	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	030	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	031	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	032	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	033	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	034	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	035	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	036	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	037	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	038	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	039	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	040	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	041	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	042	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	043	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	044	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	045	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	046	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	047	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	048	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	049	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	050	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	051	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	052	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	053	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	054	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	055	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	056	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	057	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	058	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	059	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	060	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	061	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	062	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	063	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	064	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	065	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	066	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	067	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	068	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	069	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	070	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	071	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	072	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	073	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	074	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	075	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	076	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	077	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	078	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	079	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	080	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	081	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	082	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	083	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	084	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	085	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	086	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	087	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	088	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	089	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	090	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	091	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	092	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	093	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	094	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	095	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	096	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	097	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	098	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	099	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓
	100	8-624-WM-6S	✓	MS	MSD	5/4/94	1300	✓

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: Low Concentration Methods
10/92 Organics
10/91 Inorganics

DATE/REVISIONS: 5-6-94 1. Subbed metals to Lockheed VAS

WESTON Analytics Use Only

1-21-1991 373 377 381 56

WESTON Analytics Use Only

44051472

Custody Transfer Record/Lab Work Request

WESTON
Page 1 of 2

Client <u>TCB - Enterprise Ave Landfill</u>		Refrigerator #	Liquid		1	6	6														
Est. Final Proj. Sampling Date <u>5/17/94</u>		#/Type Container	Solid		4	6	28	28													
Work Order # <u>10535-001-001-0070-06</u>		Volume	Liquid		40	148	950														
Project Contact/Phone <u>815-0877000</u>		Solid																			
AD Project Manager <u>6/1/94</u>		Preservatives	HCl		1	1	1	1													
OC <u>330 day</u>		ANALYSES REQUESTED	ORGANIC																		
Date Rec'd <u>5-17-94</u>		Date Due <u>See Note (1)</u>	Herb																		
Account # <u>5541</u>			Metal																		
MATRIX CODES:		WESTON Analytics Use Only																			
8 - Soil		Lab ID	Client ID/Description	Matrix OC Chosen (V)	Matrix	Date Collected	Time Collected	MS	MSD												
SE - Sediment																					
SL - Sludge																					
W - Water																					
O - Oil																					
A - Air																					
DB - Drum																					
SL - Solids																					
DL - Drum																					
L - Liquids																					
EP/CLP																					
Leachate																					
W - Wipe																					
X - Other																					
F - Fish																					

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS: 5541 1. Note: 2 Wm Rec'd for "SD" only

WESTON Analytics Use Only

Special Instructions: * Low Concentration methods

10/92 - Organics
10/91 - Inorganics

Relinquished by	Received by	Date	Time
<u>5. M. (Gunn)</u>	<u>5-19-94</u>	<u>0900</u>	
<u>18</u>	<u>5-14-94</u>	<u>1800</u>	

Discrepancies Between Samples Labels and COC Record? Y or N

1) Shipped <u>Y</u> or Hand Delivered <u>N</u>	1) Present on Outer Package <u>Y</u> or N
2) Ambient or Sealed Airbill <u>Y</u>	2) Unbroken on Outer Package <u>Y</u> or N
3) Received in Good Condition <u>Y</u> or N	3) Present on Sample Y or N
4) Label Attached Properly <u>Y</u>	4) Unbroken on Sample Y or N
5) Received Within Holding Time <u>Y</u> or N	COC Record Present Upon Sample Rec'd Y or N



Custody Transfer Record/Lab Work Request

WESTON
MANUFACTURING COMPANY
 Page 1 of 2

[illegible]

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS:
5.674 1. 50

WESTON Analytics Use Only

Samples were: **COC Tape was:**
 1) Shipped or 1) Preset on Quiler

Hand Delivered

Albion 1000

2) Ambient or Chilled

3) Received in Good Condition

Condition: C or N

4) Labels indicate Properly Preserved

Y or N

5) Received Within

Holding Times

NY

Boole

596

596

Custody Transfer Record/Lab Work Request

[illegible]

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

DATE/REVISIONS:

Special instructions:

WESTON Analytics Use Only

Yeast concentration methods
organics 10/92
inorganics 10/91

Relinquished by	Received by	Date	Time
Stinebaugh	7/16/94	5/16/94	830
		5/16/94	

Relinquished by	Received by	Date	Time
	5/16/94	5/16/94	

Discrepancies Between Samples Labels and COC Record?	Y or N
5) Receiver Willing to Hold Title	Y or N

Sample	Y or N	COC Record Present Upon Sample Rec'd	Y or N
1	Y	Y	Y

APPENDIX D

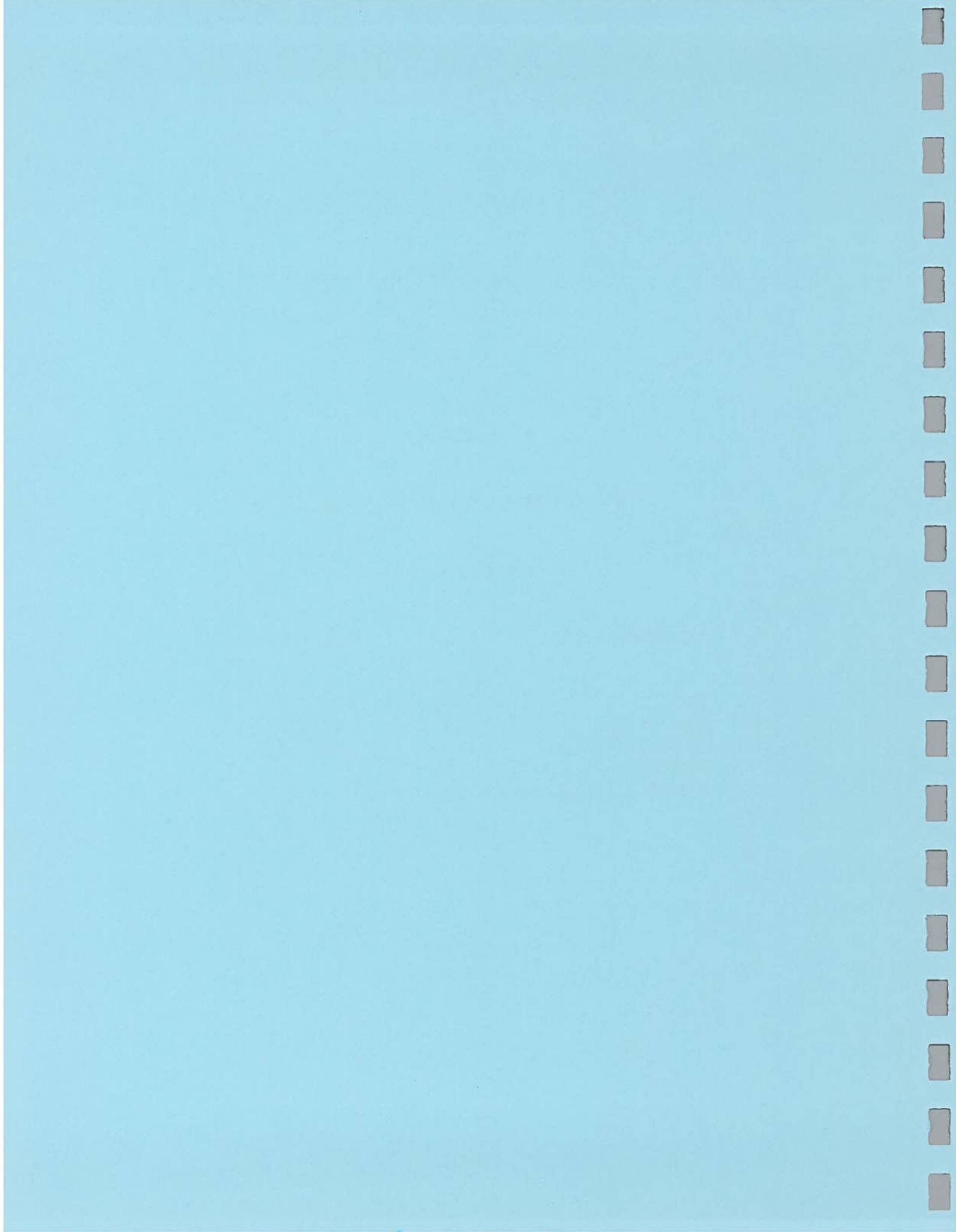
MAY 1994 GROUNDWATER ANALYTICAL DATA

Presentation Order

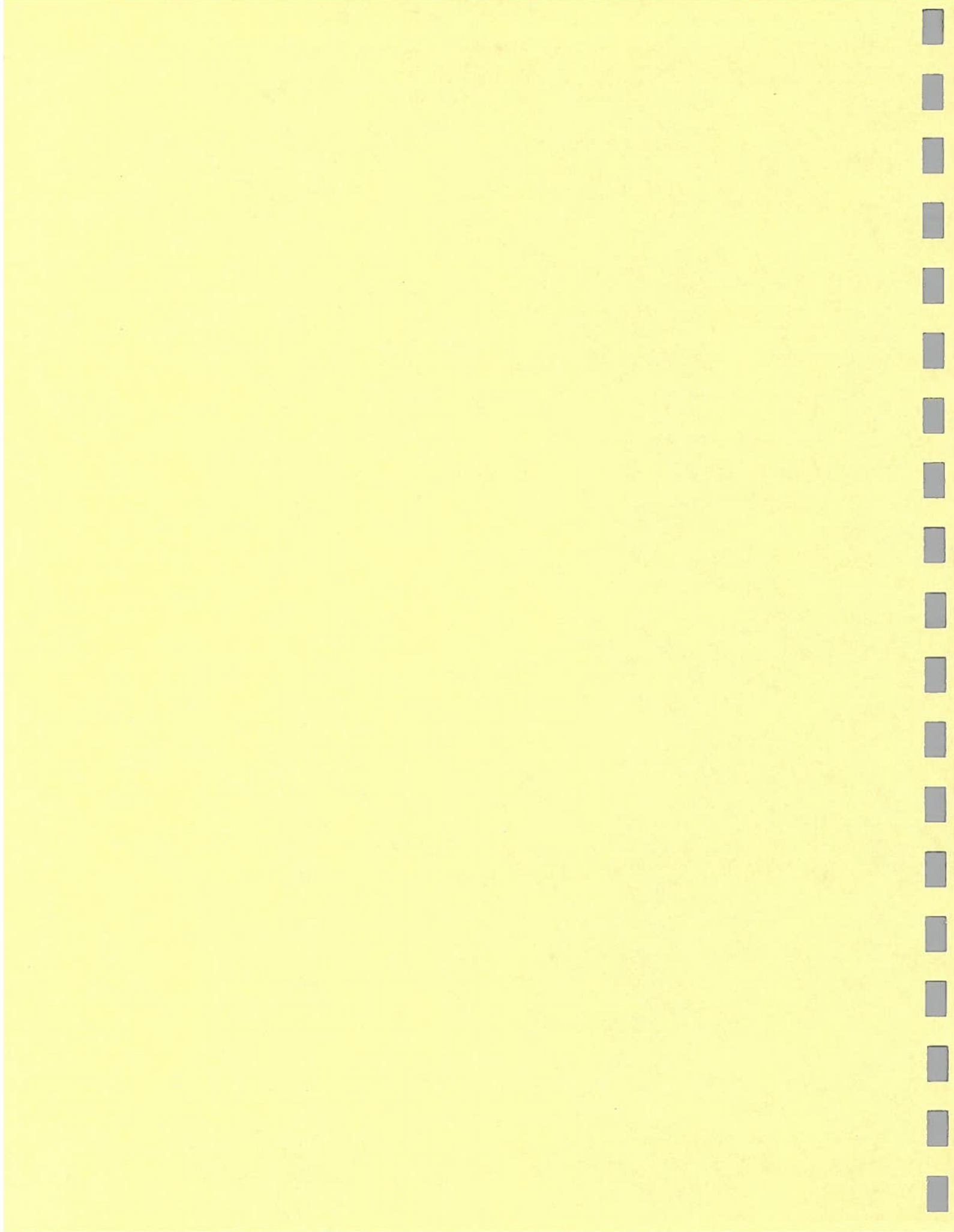
Analytical Parameters

Batch Numbers

Volatiles	9405L449
Semivolatiles	9405L472
Pesticides/PCBs	9405L493
Metals	
Cyanide and total dissolved solids	



VOLATILES





GLOSSARY OF VOA DATA

DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y,Z** = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP	=	Indicates Spiked Compound.



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP** - Missed Peak: manually added peak not found by automatic quan program.
- PA** - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI** - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP** - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB** - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI** - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

1942

MEMORANDUM FOR THE RECORD

On 10/10/42, the following information was received from the [redacted] office:

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.

[redacted] advised that [redacted] had been [redacted] on 10/10/42.





ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L449

W.O. #: 10535-001-001-0070-00
Date Received: 05-03-94

GC/MS VOLATILE

The set of samples consisted of ten (10) water samples collected on 05-02,03-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were not detected in these samples.
2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.
3. All matrix spike recoveries were within EPA QC limits.
4. All blank spike recoveries were within EPA QC limits.
5. The laboratory blanks contained the common contaminants Methylene Chloride and/or Acetone at levels less than the CRQL. The laboratory blanks 94LVB081-MB1 and 94LVB083-MB1 also contained the target compound Carbon Disulfide at levels less than the CRQL.
6. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-_{d4}.

All internal standard area and retention time criteria were met.

7. Sample pH information has been reported in Section XI (Preparation Logs).

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

06.01.94.
Date

RFW Batch Number: 94051449

Client: TCB/EAL
Koy F. Weston, Inc. - Knoxville Laboratory
Volatiles by GC/MS

Work Order: 10535001001
Report Date: 05/31/94 11:58
Page: 1a

Cust ID: 2-GW-WM-2M 2-GW-WM-2D 2-GW-WM-4M TRIP BLANK 2-GW-WM-3S 2-GW-WM-3M

Sample Information RFW#: 001 002 003 004 005 006

Matrix: WATER WATER WATER WATER WATER WATER

D.F.: 1.00 1.00 1.00 1.00 1.00 1.00

Units: ug/L ug/L ug/L ug/L ug/L ug/L

Surrogate	1,2-Dichloroethane-d4	93	%	106	%	106	%	90	%	91	%	106	%
Recovery	Toluene-d8	105	%	98	%	98	%	111	%	104	%	99	%
	Bromofluorobenzene	95	%	98	%	109	%	86	%	101	%	111	%
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride		1	U	1	U	1	U	1	U	1	U	2	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		1	JB	3	B	1	JB	2	B	0.8	JB	0.9	JB
Acetone		5	U	6	B	5	U	5	U	5	U	5	U
Carbon Disulfide		1	U	0.2	JB	1	U	1	U	0.2	J	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-dichloroethene		1	U	1	U	1	U	1	U	1	U	0.6	J
Trans-1,2-dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		1	U	0.9	J	0.4	J	0.2	J	1	U	1	U
1,2-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone		5	U	5	U	5	U	5	U	5	U	5	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane		1	U	0.1	J	1	U	1	U	1	U	1	U
Carbon Tetrachloride		1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane		1	U	0.1	J	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Benzene		1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene		1	U	1	U	1	U	1	U	1	U	1	U
Bromoform		1	U	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U
Tetrachloroethane		1	U	1	U	1	U	1	U	1	U	1	U

* = Outside of EPA CLP QC limits.

RFW Batch Number: 94051449

Client: TCB/KAL

Work Order: 10535001001

Page: 1b

Cust ID: 2-GW-WM-2M

2-GW-WM-2D

2-GW-WM-4M

TRIP BLANK

2-GW-WM-3S

2-GW-WM-3M

RFW#:

001

002

003

004

005

006

1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	0.1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	1 U	1 U	0.1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U

* = Outside of EPA CLP QC limits.

RFW Batch Number: 9405L449

Client: TCB/BAL

Work Order: 10535001001

Page: 2a

Cust ID: 2-GW-MM-3D

2-GW-MM-3D

2-GM-WH-3D

TRIP BLANK

2-GH-WH-4B

2-GW-MM-4D

8

**Sample
Information**

REF#: 007
Matrix: WATER

007 MS	007 MSD
WATER	WATER

008
WATER

009
WATER

010
WATER

30

D.F.:	1.00
Units:	ug/L

1.00	1.0
1.00	1.0

1.00
ug/L1.00
ug/L1.0
ug/L

0

Surrogate Recovery	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	102 98 101	% % %	104 99 106	% % %	106 94 101	% % %	94 92 81	% % %	107 96 117	% % %	99 97 107	% % %
Chloromethane		1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane		1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride		1	U	91	%	74	%	1	U	1	U	1	U
Chloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride		0.6	JB	0.9	JB	0.7	JB	4	B	1	JB	1	JB
Acetone		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Disulfide		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-dichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Chloroform		0.5	J	0.4	J	0.3	J	0.2	J	1	U	1	U
1,2-Dichloroethane		1	U	100	%	102	%	1	U	1	U	1	U
2-Butanone		5	U	5	U	5	U	5	U	5	U	5	U
Bromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane		0.3	J	0.2	J	0.2	J	1	U	1	U	1	U
Carbon Tetrachloride		1	U	96	%	90	%	1	U	1	U	1	U
Bromodichloromethane		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane		1	U	92	%	91	%	1	U	1	U	1	U
cis-1,3-Dichloropropene		1	U	91	%	93	%	1	U	1	U	1	U
Trichloroethene		1	U	94	%	88	%	1	U	1	U	1	U
Dibromochloromethane		1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane		1	U	101	%	99	%	1	U	1	U	1	U
Benzene		1	U	101	%	97	%	1	U	1	U	1	U
Trans-1,3-Dichloropropene		1	U	112	%	112	%	1	U	1	U	1	U
Bromoform		1	U	102	%	98	%	1	U	1	U	1	U
4-Methyl-2-pentanone		5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone		5	U	5	U	5	U	5	U	5	U	5	U
Tetrachloroethene		1	U	103	%	91	%	1	U	1	U	1	U

* = Outside of EPA CLP QC limits.

Cust ID: 2-GW-WM-3D

2-GW-WM-3D

2-GW-WM-3D

TRIP BLANK

2-GW-WM-4B

2-GW-WM-4D

RFW#:

007

007 MS

007 MSD

008

009

010

1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	1	U	100	%	99	%	1	U	1	U
Toluene	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	1	U	1	U	1	U	1	U	1	U
Styrene	1	U	1	U	1	U	1	U	1	U
Xylene (total)	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	99	%	94	%	1	U	1	U
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	1	U	1	U	1	U	1	U	1	U

* = Outside of EPA CLP QC limits.

RFW Batch Number: 94051449

Client: TCB/EAL

Work Order: 10535001001

Page: 3a

Volatiles by GC/MS

Report Date: 05/31/94 11:58

Sample Information

RFW#: 94LVB082-MB1 94LVB081-MB1 94LVB083-MB1 94LVB083-MB1
Matrix: WATER WATER WATER WATER
D.F.: 1.00 1.00 1.00 1.00
Units: ug/L ug/L ug/L ug/L

Cust ID:

VBLK

VBLK

VBLK

VBLK BS

Surrogate	1,2-Dichloroethane-d4	102	%	107	%	103	%	95	%
Recovery	Toluene-d8	100	%	99	%	98	%	94	%
	Bromofluorobenzene	104	%	94	%	101	%	100	%

Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	1 J	1 J	1 J	1 J	1 J	1 J	1 J	1 J	1 J
Acetone	5 U	4 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	1 U	0.2 J	0.2 J	0.2 J	0.2 J	0.2 J	0.2 J	0.2 J	0.2 J
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

* Outside of EPA CLP QC limits.

00100

Cust ID: VBLK

VBLK

VBLK

VBLK BS

RFW#: 94LVB082-MB1 94LVB081-MB1 94LVB083-MB1 94LVB083-MB1

1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	1	U
1,2-Dibromoethane	1	U	1	U	1	U	92	%
Toluene	1	U	1	U	1	U	1	U
Chlorobenzene	1	U	1	U	1	U	1	U
Ethylbenzene	1	U	1	U	1	U	1	U
Styrene	1	U	1	U	1	U	1	U
Xylene (total)	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U	1	U	92	%
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	1	U	1	U	1	U	1	U

* = Outside of EPA CLP QC limits.

0011

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

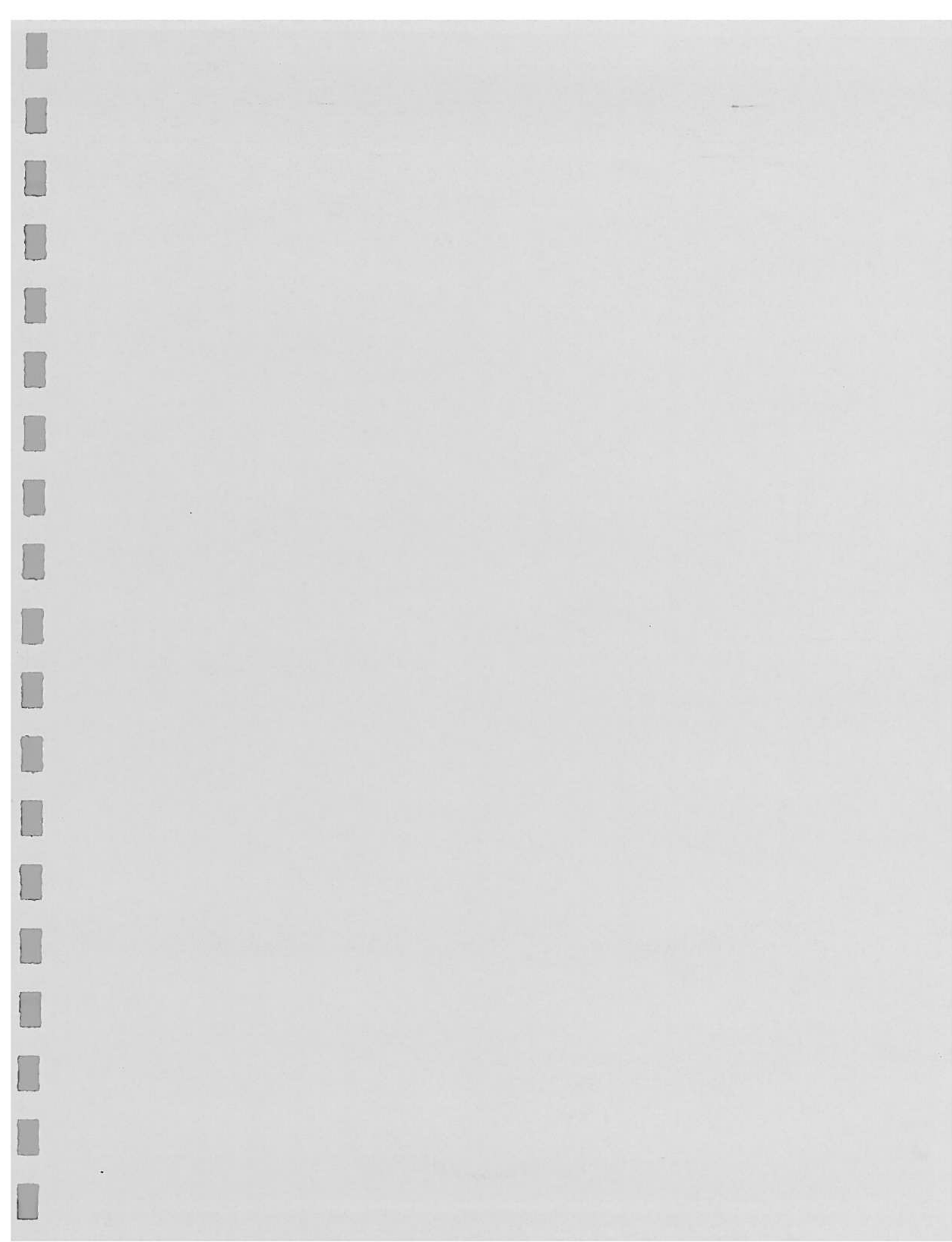
DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M	001	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-2D	002	W	94LVB081	05/02/94	N/A	05/12/94
2-GW-WM-4M	003	W	94LVB082	05/03/94	N/A	05/12/94
TRIP BLANK	004	W	94LVB081	05/03/94	N/A	05/12/94
2-GW-WM-3S	005	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-3M	006	W	94LVB082	05/02/94	N/A	05/12/94
2-GW-WM-3D	007	W	94LVB083	05/02/94	N/A	05/13/94
2-GW-WM-3D	007 MS	W	94LVB083	05/02/94	N/A	05/13/94
2-GW-WM-3D	007 MSD	W	94LVB083	05/02/94	N/A	05/13/94
TRIP BLANK	008	W	94LVB081	05/02/94	N/A	05/12/94
2-GW-WM-4S	009	W	94LVB082	05/03/94	N/A	05/12/94
2-GW-WM-4D	010	W	94LVB082	05/03/94	N/A	05/12/94

LAB QC:

VBLK	MB1	W	94LVB082	N/A	N/A	05/12/94
VBLK	MB1	W	94LVB081	N/A	N/A	05/12/94
VBLK	MB1	W	94LVB083	N/A	N/A	05/13/94
VBLK	MB1 BS	W	94LVB083	N/A	N/A	05/13/94







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L472

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

GC/MS VOLATILE

The set of samples consisted of seven (7) water samples collected on 05-03,04-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. A non-target compound was detected in sample 2-GW-WM-6M.
2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.
3. Matrix spike analyses are associated with RFW lot 9405L449.
4. The laboratory blanks contained the common contaminant Methylene Chloride at levels less than the CRQL.
5. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-_{d4}.

Internal standard areas were outside QC limits for sample 2-GW-WM-6D. This sample was reanalyzed on 05-13-94 and reported.

6. Sample pH information has been reported in Section XI (Preparation Logs).

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

sma/voa/05-472v.cn

06.01.94.
Date

0005

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS

Report Date: 05/25/94 15:35
Page: 1a

RFW Batch Number: 9405L472

Client: TCB/EAL Work Order: 10535001001

Cust ID: 2-GW-WM-5S 2-GW-WM-5M 2-GW-WM-5D 2-GW-WM-6M 2-GW-WM-6D 2-GW-WM-6D

Sample Information	RFW#:	001	002	003	004	005	005
Matrix:	WATER	WATER	WATER	WATER	WATER	WATER	WATER
D.F.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
1,2-Dichloroethane-d4	95	101	97	101	107	85	
Toluene-d8	98	101	99	99	104	119	
Bromofluorobenzene	96	99	99	98	104	116	
Chloromethane	1	1	1	1	1	1	1
Bromomethane	1	1	1	1	1	1	1
Vinyl Chloride	1	1	1	1	1	1	1
Chloroethane	1	1	1	1	1	1	1
Methylene Chloride	2	1	2	2	2	0.5	JB
Acetone	5	5	35	5	5	5	5
Carbon Disulfide	1	0.3	1	0.3	0.7	0.9	J
1,1-Dichloroethene	1	1	1	1	1	1	1
1,1-Dichloroethane	1	1	1	1	1	1	1
Cis-1,2-dichloroethene	1	1	1	1	1	1	1
Trans-1,2-dichloroethene	1	1	1	1	1	1	1
Chloroform	1	0.3	0.5	1	1	1	1
1,2-Dichloroethane	1	1	1	1	1	1	1
2-Butanone	5	5	5	5	5	5	5
Bromochloromethane	1	1	1	1	1	1	1
1,1,1-Trichloroethane	1	1	1	1	1	1	1
Carbon Tetrachloride	1	1	1	1	1	1	1
Bromodichloromethane	1	1	1	1	1	1	1
1,2-Dichloropropane	1	1	1	1	1	1	1
cis-1,3-Dichloropropene	1	1	1	1	1	1	1
Trichloroethene	1	1	1	1	1	1	1
Dibromochloromethane	1	1	1	1	1	1	1
1,1,2-Trichloroethane	1	1	1	1	1	1	1
Benzene	1	1	1	1	1	1	1
Trans-1,3-Dichloropropene	1	1	1	1	1	1	1
Bromoform	1	1	1	1	1	1	1
4-Methyl-2-pentanone	5	5	5	5	5	5	5
2-Hexanone	5	5	5	5	5	5	5
Tetrachloroethene	1	1	1	1	1	1	1

*= Outside of EPA CLP QC limits.

Page: 1b

2-GW-WM-6D

005

[illegible]

***** Outside of EPA CLP QC limits.**

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS

Report Date: 05/25/94 15:35
Work Order: 10535001001 Page: 2a

RFW Batch Number: 9405L472

Client: TCB/EAL

Cust ID: 2-FB-WM-5D	TRIP BLANK	VBLK	VBLK	VBLK
RFW#: 006	007	94LVX069-MB1	94LVX070-MB1	94LVB082-MB1
Matrix: WATER	WATER	WATER	WATER	WATER
D.F.: 1.00	1.00	1.00	1.00	1.00
Units: ug/L	ug/L	ug/L	ug/L	ug/L

Sample Information	99 %	103 %	95 %	92 %	102 %
1,2-Dichloroethane-d4	1 U	1 U	1 U	1 U	1 U
Toluene-d8	1 U	1 U	1 U	1 U	1 U
Bromofluorobenzene	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	0.8 JB	5 B	0.9 J	0.7 J	1 J
Acetone	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	1 U	0.4 J	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U
Cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U
Trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U

** Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/04/94

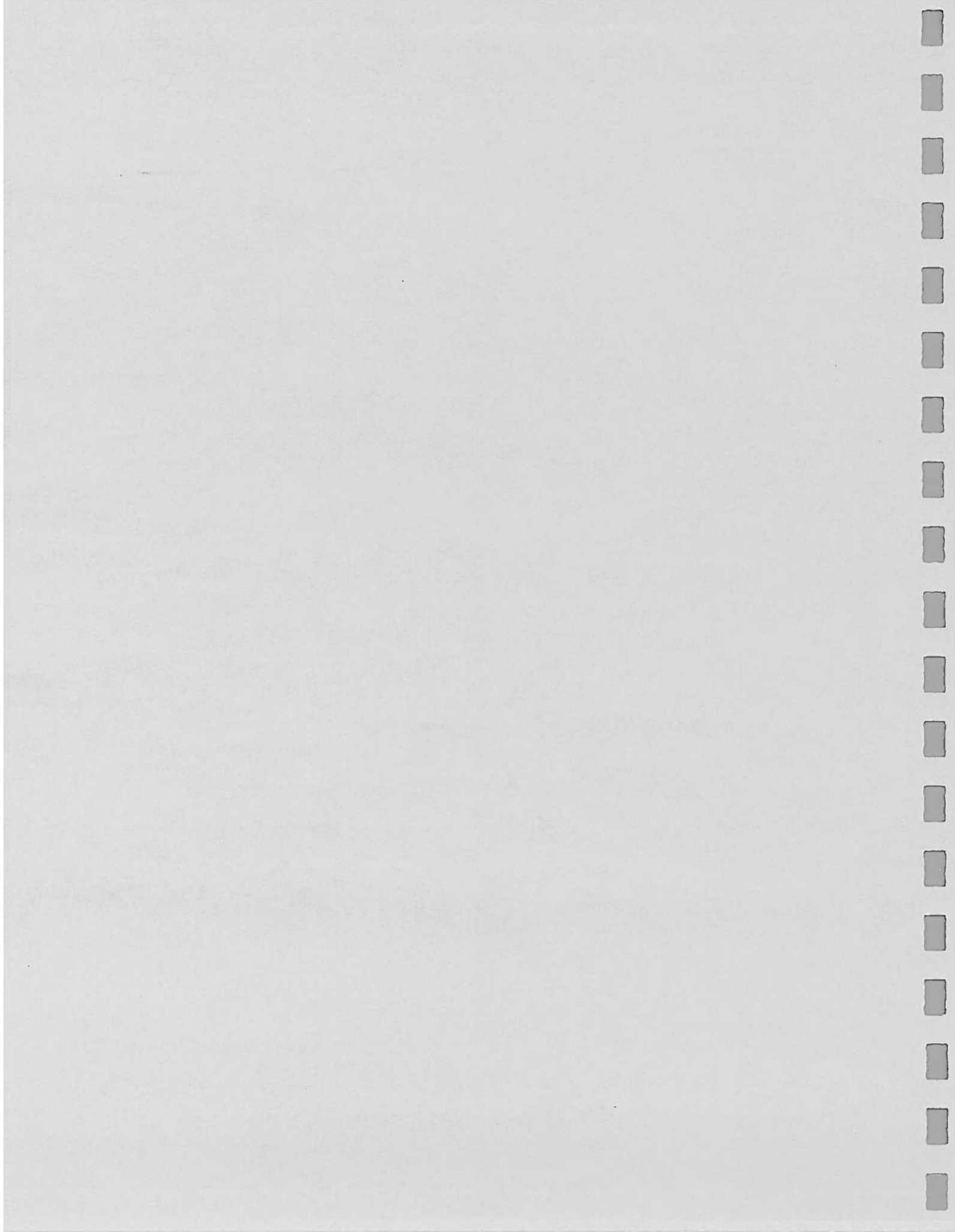
RFW LOT # :9405L472

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S	001	W	94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-5M	002	W	94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-5D	003	W	94LVX069	05/04/94	N/A	05/12/94
2-GW-WM-6M	004	W	94LVX069	05/03/94	N/A	05/12/94
2-GW-WM-6D	005	W	94LVX069	05/03/94	N/A	05/12/94
2-GW-WM-6D	005	R1 W	94LVX070	05/03/94	N/A	05/13/94
2-FB-WM-5D	006	W	94LVX070	05/04/94	N/A	05/13/94
TRIP BLANK	007	W	94LVB082	05/04/94	N/A	05/12/94

LAB QC:

VLBK	MB1	W	94LVX069	N/A	N/A	05/12/94
VLBK	MB1	W	94LVX070	N/A	N/A	05/13/94
VLBK	MB1	W	94LVB082	N/A	N/A	05/12/94

0002





ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L493

W.O. #: 10535-001-001-0070-00
Date Received: 05-06-94

GC/MS VOLATILE

The set of samples consisted of seven (7) water samples collected on 05-04,05-94.

The samples were analyzed according to criteria set forth in Superfund Analytical Methods For Low Concentration Water For Organics Analysis (10/92) for Volatile target compounds on 05-12,13-94.

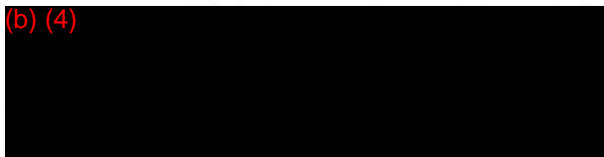
The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.
2. Samples 2-GW-WM-1M and 2-DP-WM-1M required 12.5-fold dilutions because they contained high levels of target compounds.
3. One (1) of thirty-three (33) system monitoring compound (surrogate) recoveries was outside EPA QC limits. Sample 2-GM-WM-1M was diluted, reanalyzed on 05-13-94, and reported.
4. Matrix spike analyses are associated with RFW lot 9405L449.
5. The laboratory blanks contained the common contaminants Methylene Chloride and/or Acetone at levels less than the CRQL. The laboratory 94LVB081-MB1 also contained target compound Carbon Disulfide at a level less than the CRQL.
6. The internal standards and criteria contained on the Form 8s are not appropriate for this method. IS1 was 1,4-Difluorobenzene, IS2 was Chlorobenzene-_{d5} and IS3 was 1,4-Dichlorobenzene-_{d4}.

All internal standard area and retention time criteria were met.

7. Sample pH information has been reported in Section XI (Preparation Logs).

(b) (4)



Laboratory Manager
Lionville Analytical Laboratory

06.02.94
Date

0005

RFW Batch Number: 94051493

Client: TCB/EAL

Work Order: 10535001001

Page: 1A

Volatiles by GC/MS

Report Date: 05/30/94 11:57

Cust ID: 2-GW-WM-68

2-GW-WM-28

2-GW-WM-1S

TRIP BLANK

2-GW-WM-1M

2-GW-WM-1M

Sample

RFW#:

001

Information

Matrix:

WATER

WATER

WATER

WATER

WATER

WATER

D.F.: 1.00

1.00

1.00

1.00

1.00

12.00

ug/L

1,2-Dichloroethane-d4

100 %

89 %

103 %

93 %

104 %

100 %

Surrogate

Toluene-d8

95 %

98 %

93 %

103 %

105 %

109 %

%

Recovery

Bromofluorobenzene

109 %

108 %

114 %

94 %

134 %

109 %

%

Chloromethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Bromomethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Vinyl Chloride

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Chloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Methylene Chloride

0.9 JB

1 JB

1 JB

0.9 JB

4 B

1 JB

14 JB

U

Acetone

5 U

9

5 U

5 U

5 B

5 U

62 U

U

Carbon Disulfide

3

4

1 U

1 U

0.2 JB

1

3 JD

U

1,1-Dichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

1,1-Dichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Cis-1,2-dichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Trans-1,2-dichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Chloroform

1 U

1 U

1 U

1 U

0.1 J

1 U

12 U

U

1,2-Dichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

2-Butanone

5 U

5 U

5 U

5 U

5 U

5 U

62 U

U

Bromochloromethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

1,1,1-Trichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Carbon Tetrachloride

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Bromodichloromethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

1,2-Dichloropropane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

cis-1,3-Dichloropropene

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Trichloroethene

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Dibromochloromethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

1,1,2-Trichloroethane

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Benzene

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Trans-1,3-Dichloropropene

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

Bromoform

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

4-Methyl-2-pentanone

5 U

5 U

5 U

5 U

5 U

5 U

62 U

U

2-Hexanone

5 U

5 U

5 U

5 U

5 U

5 U

62 U

U

Tetrachloroethene

1 U

1 U

1 U

1 U

1 U

1 U

12 U

U

* = Outside of EPA CLP QC limits.

RFW Batch Number: 94051493

Client: TCB/EAL

Work Order: 10535001001

Page: 1b

Cust ID: 2-GW-WM-69

2-GW-WM-28

2-GW-WM-18

TRIP BLANK

2-GW-WM-1M

2-GW-WM-1M

RFW#:

001

002

003

004

005

005 DL

1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	1	U	1	U	12	U
1,2-Dibromoethane	1	U	1	U	1	U	1	U	1	U	12	U
Toluene	1	U	0.2	J	1	U	0.1	J	1	U	12	U
Chlorobenzene	1	U	1	U	1	U	1	U	160	E	300	D
Ethylbenzene	1	U	0.2	J	1	U	1	U	0.1	J	12	U
Styrene	1	U	1	U	1	U	1	U	1	U	12	U
Xylene (total)	1	U	2		1	U	1	U	2		12	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U	10		9	JD
1,4-Dichlorobenzene	1	U	1	U	1	U	1	U	52	E	51	D
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U	20		18	D
1,2-Dibromo-3-chloropropane	1	U	1	U	1	U	1	U	1	U	12	U

* Outside of EPA CLP QC limits.

1/15
6/2/04

0014

Page: 2a

VBULK

X070-MB1

WATER

0015

Surrogate	1,2-Dichloroethane-d4	99	%	107	%	102	%	107	%	92	%
Recovery	Toluene-d8	106	%	104	%	100	%	99	%	109	%
	Bromofluorobenzene	102	%	110	%	104	%	94	%	105	%
Chloromethane		12	U	1	U	1	U	1	U	1	U
Bromomethane		12	U	1	U	1	U	1	U	1	U
Vinyl Chloride		12	U	1	U	1	U	1	U	1	U
Chloroethane		12	U	1	U	1	U	1	U	1	U
Methylene Chloride		10	JB	0.5	JB	1	J	1	J	0.7	J
Acetone		62	U	5	U	5	U	4	J	5	U
Carbon Disulfide		5	J	0.3	J	1	U	0.2	J	1	U
1,1-Dichloroethene		12	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane		12	U	1	U	1	U	1	U	1	U
Cis-1,2-dichloroethene		12	U	1	U	1	U	1	U	1	U
Trans-1,2-dichloroethene		12	U	1	U	1	U	1	U	1	U
Chloroform		12	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane		12	U	1	U	1	U	1	U	1	U
2-Butanone		62	U	5	U	5	U	5	U	5	U
Bromochloromethane		12	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane		12	U	0.9	J	1	U	1	U	1	U
Carbon Tetrachloride		12	U	1	U	1	U	1	U	1	U
Bromodichloromethane		12	U	0.4	J	1	U	1	U	1	U
1,2-Dichloropropane		12	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene		12	U	1	U	1	U	1	U	1	U
Trichloroethene		12	U	1	U	1	U	1	U	1	U
Dibromochloromethane		12	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane		12	U	1	U	1	U	1	U	1	U
Benzene		23		1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene		12	U	1	U	1	U	1	U	1	U
Bromoform		12	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone		62	U	5	U	5	U	5	U	5	U
2-Hexanone		62	U	5	U	5	U	5	U	5	U
Tetrachloroethene		12	U	1	U	1	U	1	U	1	U

*= Outside of EPA CLP QC limits.

Cust ID: 2-DP-WM-1M

2-GW-WM-1D

VBLK

VBLK

VBLK

RFW#:

006

007

94LVB062-MB1

94LVB061-MB1

94LVX070-MB1

1,1,2,2-Tetrachloroethane	12	U	1	U	1	U	1	U
1,2-Dibromomethane	12	U	1	U	1	U	1	U
Toluene	12	U	1	U	1	U	1	U
Chlorobenzene	310		1	U	1	U	1	U
Ethylbenzene	12	U	1	U	1	U	1	U
Styrene	12	U	1	U	1	U	1	U
Xylene (total)	12	U	1	U	1	U	1	U
1,3-Dichlorobenzene	8	J	1	U	1	U	1	U
1,4-Dichlorobenzene	51		1	U	1	U	1	U
1,2-Dichlorobenzene	16		1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	12	U	1	U	1	U	1	U

* = Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

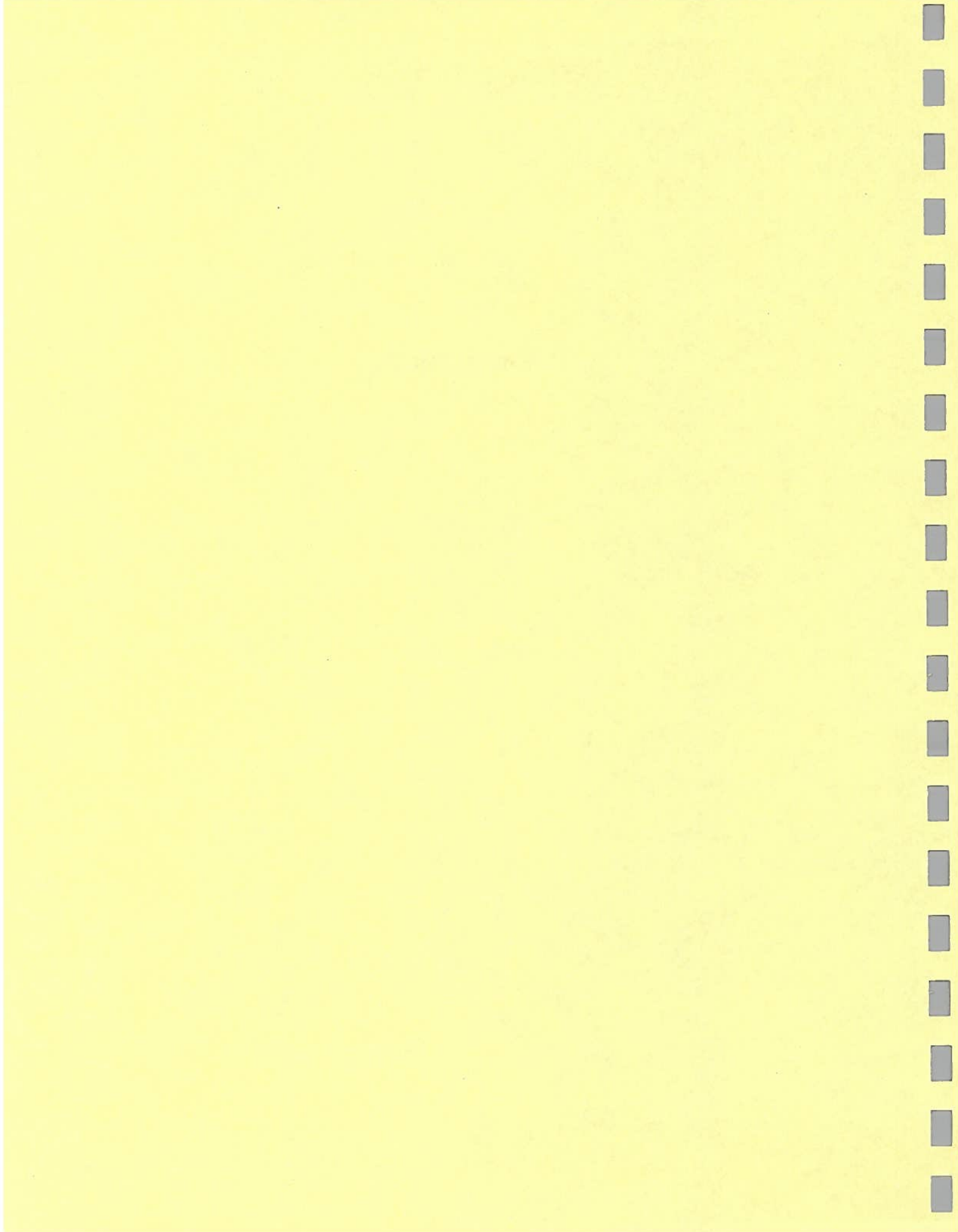
CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-6S	001	W	94LVB082	05/04/94	N/A	05/12/94
2-GW-WM-2S	002	W	94LVB082	05/05/94	N/A	05/12/94
2-GW-WM-1S	003	W	94LVB082	05/05/94	N/A	05/12/94
TRIP BLANK	004	W	94LVB081	05/05/94	N/A	05/12/94
2-GW-WM-1M	005	W	94LVB082	05/05/94	N/A	05/12/94
2-GW-WM-1M	005	D1	W 94LVX070	05/05/94	N/A	05/13/94
2-DP-WM-1M	006	W	94LVX070	05/05/94	N/A	05/13/94
2-GW-WM-1D	007	W	94LVX070	05/05/94	N/A	05/13/94

LAB QC:

VLK	MB1	W	94LVB082	N/A	N/A	05/12/94
VLK	MB1	W	94LVB081	N/A	N/A	05/12/94
VLK	MB1	W	94LVX070	N/A	N/A	05/13/94

0002

SEMIVOLATILES





GLOSSARY OF BNA DATA

DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- A** = Indicates that a TIC is a suspected aldol-condensation product.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y,Z** = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF BNA DATA

ABBREVIATIONS

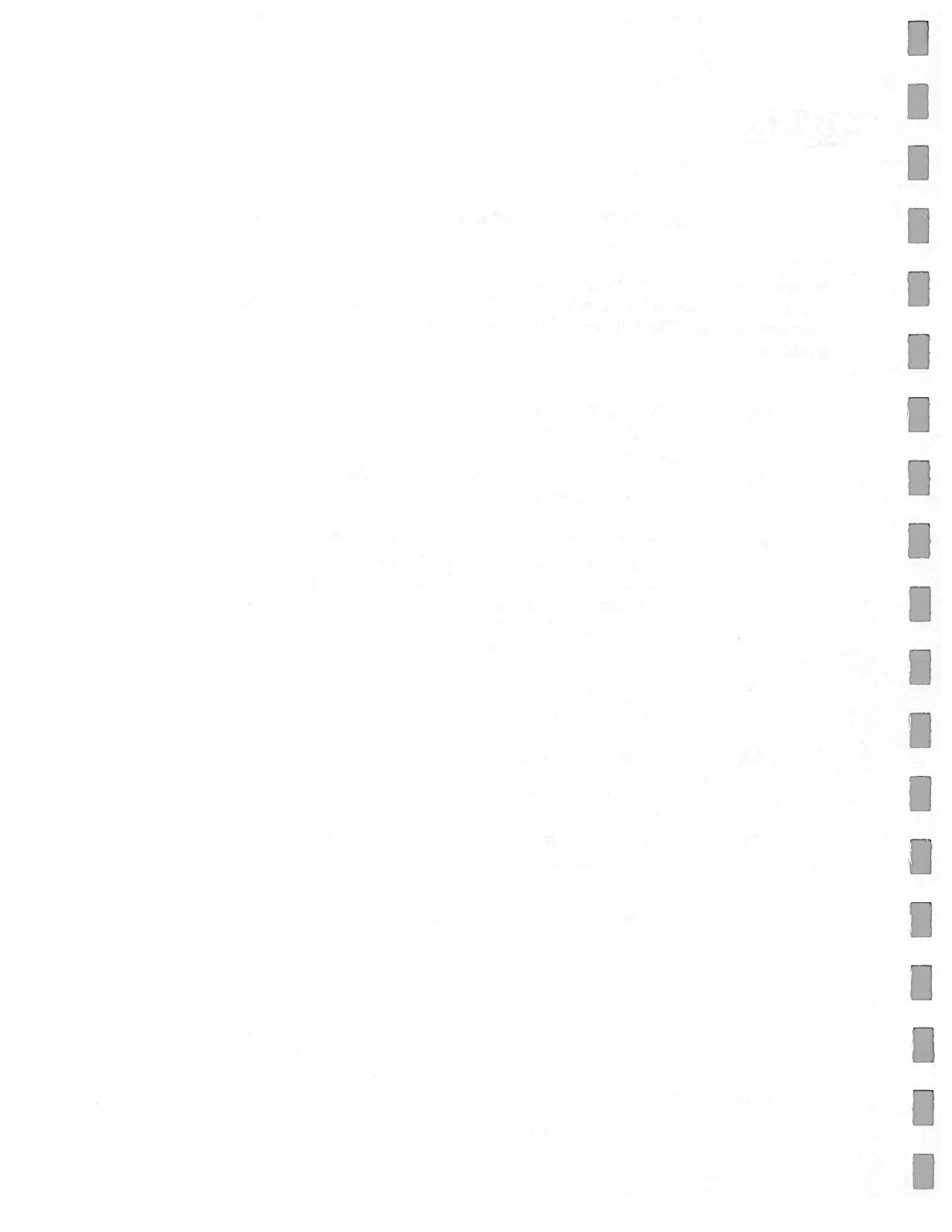
BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP	=	Indicates Spiked Compound.



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP** - Missed Peak: manually added peak not found by automatic quan program.
- PA** - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI** - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP** - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB** - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI** - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.









ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L449

W.O. #: 10535-001-001-0070-00
Date Received: 05-03-94

SEMIVOLATILE

The set of samples consisted of eight (8) water samples collected on 05-02,03-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-24,28,29-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.
2. All surrogate recoveries were within EPA QC limits.
3. Six (6) of thirty (30) matrix spike recoveries were outside EPA QC limits.
The low out-of-limit spike recoveries were consistent between the matrix spike and matrix spike duplicate and may indicate a possible matrix effect.
4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.
5. All internal standard area and retention time criteria were met.
6. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

sma/bna/05-449b.cn

06.03.94.
Date

0005

Roy F. Weston, Inc. - Lionville Laboratory
Semi-volatiles low concentration.

Report Date: 06/01/94 13:29

RFW Batch Number: 9405L449

Client: TCB/EAL

Work Order: 10535001001 Page: 1a

Cust ID: 2-GW-WM-2M 2-GW-WM-2D 2-GW-WM-4M 2-GW-WM-3S 2-GW-WM-3M 2-GW-WM-3D

Sample Information

RFW#:	001	002	003	005	006	007
Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Surrogate Recovery	Nitrobenzene-d5	76	%	93	%	82	%	75	%	87	%	85	(%)
	2-Fluorobiphenyl	69	%	79	%	64	%	68	%	73	%	74	%
	Terphenyl-d14	65	%	102	%	57	%	51	%	50	%	92	%
	Phenol-d5	85	%	104	%	96	%	94	%	69	%	40	%
	2-Fluorophenol	80	%	103	%	93	%	85	%	92	%	26	%
	2,4,6-Tribromophenol	90	%	97	%	94	%	96	%	91	%	61	%

Phenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
bis(2-Chloroethyl) ether	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2-Chlorophenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2-Methylphenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2,2'-oxybis(1-Chloropropane)	6	U	6	U	6	U	6	U	6	U	6	U	5	U
4-Methylphenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
N-Nitroso-di-n-propylamine	6	U	6	U	0.9	J	6	U	6	U	6	U	5	U
Hexachloroethane	6	U	6	U	6	U	6	U	6	U	6	U	5	U
Nitrobenzene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
Isophorone	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2-Nitrophenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2,4-Dimethylphenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
bis(2-Chloroethoxy) methane	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2,4-Dichlorophenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
1,2,4-Trichlorobenzene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
Naphthalene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
4-Chloroaniline	6	U	6	U	6	U	6	U	6	U	6	U	5	U
Hexachlorobutadiene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
4-Chloro-3-methylphenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2-Methylnaphthalene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
Hexachlorocyclopentadiene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2,4,6-Trichlorophenol	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2,4,5-Trichlorophenol	22	U	22	U	22	U	22	U	22	U	22	U	20	U
2-Chloronaphthalene	6	U	6	U	6	U	6	U	6	U	6	U	5	U
2-Nitroaniline	22	U	22	U	22	U	22	U	22	U	22	U	20	U
Dimethylphthalate	6	U	6	U	6	U	6	U	6	U	6	U	5	U

*= Outside of EPA CLP QC limits.

RFW#:	001	002	003	005	006	007
Acenaphthylene	6 U	6 U	6 U	6 U	6 U	5 U
2,6-Dinitrotoluene	6 U	6 U	6 U	6 U	6 U	5 U
3-Nitroaniline	22 U	22 U	22 U	22 U	22 U	20 U
Acenaphthene	6 U	6 U	6 U	6 U	6 U	5 U
2,4-Dinitrophenol	22 U	22 U	22 U	22 U	22 U	20 U
4-Nitrophenol	22 U	22 U	22 U	22 U	22 U	20 U
Dibenzofuran	6 U	6 U	6 U	6 U	6 U	5 U
2,4-Dinitrotoluene	6 U	6 U	6 U	6 U	6 U	5 U
Diethylphthalate	6 U	6 U	6 U	6 U	6 U	5 U
4-Chlorophenyl-phenylether	6 U	6 U	6 U	6 U	6 U	5 U
Fluorene	6 U	6 U	6 U	6 U	6 U	5 U
4-Nitroaniline	22 U	22 U	22 U	22 U	22 U	20 U
4,6-Dinitro-2-methylphenol	22 U	22 U	22 U	22 U	22 U	20 U
N-Nitrosodiphenylamine	6 U	6 U	6 U	6 U	6 U	5 U
4-Bromophenyl-phenylether	6 U	6 U	6 U	6 U	6 U	5 U
Hexachlorobenzene	6 U	6 U	6 U	6 U	6 U	5 U
Pentachlorophenol	22 U	22 U	22 U	22 U	22 U	20 U
Phenanthrene	6 U	6 U	6 U	6 U	6 U	5 U
Anthracene	6 U	6 U	6 U	6 U	6 U	5 U
Di-n-butylphthalate	6 U	6 U	6 U	6 U	6 U	5 U
Fluoranthene	6 U	6 U	6 U	6 U	6 U	5 U
Pyrene	6 U	6 U	6 U	6 U	6 U	5 U
Butylbenzylphthalate	6 U	6 U	6 U	6 U	6 U	5 U
3,3'-Dichlorobenzidine	6 U	6 U	6 U	6 U	6 U	5 U
Benzo(a)anthracene	6 U	6 U	6 U	6 U	6 U	5 U
Chrysene	6 U	6 U	6 U	6 U	6 U	5 U
bis(2-Ethylhexyl)phthalate	2 J	1 J	6 U	1 J	16	5 U
Di-n-octyl phthalate	6 U	6 U	6 U	6 U	6 U	5 U
Benzo(b)fluoranthene	6 U	6 U	6 U	6 U	6 U	5 U
Benzo(k)fluoranthene	6 U	6 U	6 U	6 U	6 U	5 U
Benzo(a)pyrene	6 U	6 U	6 U	6 U	6 U	5 U
Indeno(1,2,3-cd)pyrene	6 U	6 U	6 U	6 U	6 U	5 U
Dibenz(a,h)anthracene	6 U	6 U	6 U	6 U	6 U	5 U
Benzo(g,h,i)perylene	6 U	6 U	6 U	6 U	6 U	5 U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

RFW Batch Number: 2405L449

Client: TCB/PAI

Work Order: 10535001001 Page: 2A

Report Date: 06/01/94 13:29

Cust ID: 2-GW-WM-3D 2-GW-WM-3D 2-GW-WM-4S 2-GW-WM-4D SBLK SBLK BS
Sample RFW#: 007 MS 007 MSD 009 010 94LE0890-MB1 94LE0890-MB1
Information Matrix: WATER WATER WATER WATER WATER WATER
D.F.: 1.00 1.00 1.00 1.00 1.00 1.00
Units: ug/L ug/L ug/L ug/L ug/L ug/L

Surrogate	Nitrobenzene-d5	95	%	94	%	83	%	84	%	81	%	85	%
Recovery	2-Fluorobiphenyl	78	%	81	%	69	%	72	%	49	%	63	%
	Terphenyl-d14	88	%	85	%	45	%	95	%	98	%	99	%
	Phenol-d5	71	%	93	%	90	%	82	%	93	%	100	%
	2-Fluorophenol	66	%	96	%	90	%	97	%	88	%	91	%
	2,4,6-Tribromophenol	85	%	94	%	89	%	90	%	87	%	90	%
Phenol		62	%	95	%	5	U	5	U	5	U	92	%
bis(2-Chloroethyl) ether		92	%	107	%	5	U	5	U	5	U	88	%
2-Chlorophenol		72	%	98	%	5	U	5	U	5	U	85	%
2-Methylphenol		5	U	5	U	5	U	5	U	5	U	5	U
2,2'-oxybis(1-Chloropropane)		5	U	5	U	5	U	5	U	5	U	5	U
4-Methylphenol		5	U	5	U	5	U	5	U	5	U	5	U
N-Nitroso-di-n-propylamine		98	%	92	%	5	U	5	U	5	U	102	%
Hexachloroethane		50	%	58	%	5	U	5	U	5	U	36	%
Nitrobenzene		5	U	5	U	5	U	5	U	5	U	5	U
Isophorone		87	%	99	%	5	U	5	U	5	U	88	%
2-Nitrophenol		2	J	5	U	5	U	5	U	5	U	5	U
2,4-Dimethylphenol		5	U	5	U	5	U	5	U	5	U	5	U
bis(2-Chloroethoxy) methane		5	U	5	U	5	U	5	U	5	U	5	U
2,4-Dichlorophenol		5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene		54	%	62	%	5	U	5	U	5	U	38	%
Naphthalene		63	%	74	%	5	U	5	U	5	U	46	%
4-Chloroaniline		8	*	10	*	5	U	5	U	5	U	11	*
Hexachlorobutadiene		5	U	5	U	5	U	5	U	5	U	5	U
4-Chloro-3-methylphenol		5	U	5	U	5	U	5	U	5	U	5	U
2-Methylnaphthalene		5	U	5	U	5	U	5	U	5	U	5	U
Hexachlorocyclopentadiene		5	U	5	U	5	U	5	U	5	U	5	U
2,4,6-Trichlorophenol		68	%	92	%	5	U	5	U	5	U	88	%
2,4,5-Trichlorophenol		20	U	20	U	20	U	20	U	20	U	20	U
2-Chloronaphthalene		5	U	5	U	5	U	5	U	5	U	5	U
2-Nitroaniline		20	U	20	U	20	U	20	U	20	U	20	U
Dimethylphthalate		5	U	5	U	5	U	5	U	5	U	5	U

* = Outside of EPA CLP QC limits.

RFW#:	007 MS	007 MSD	009	010	94LR0890-MB1	94LR0890-MB1
Acenaphthylene	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	20 U	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	20 U	20 U	20 U	20 U	20 U	20 U
Dibenzofuran	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrotoluene	64 %	69 %	5 U	5 U	5 U	71 %
Diethylphthalate	82 %	93 %	5 U	5 U	5 U	84 %
4-Chlorophenyl-phenylether	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	20 U	20 U	20 U	20 U	20 U	20 U
N-Nitrosodiphenylamine	0 * %	0 * %	5 U	5 U	5 U	53 %
4-Bromophenyl-phenylether	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	80 %	94 %	5 U	5 U	5 U	83 %
Pentachlorophenol	20 U	20 U	20 U	20 U	20 U	20 U
Phenanthrene	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-butylphthalate	5 U	5 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U	5 U	5 U	5 U
Butylbenzylphthalate	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	5 U	5 U	5 U	5 U	5 U	5 U
Benzo (a) anthracene	5 U	5 U	5 U	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U	5 U	5 U	5 U
bis (2-Ethylhexyl) phthalate	3 J	5 U	2 J	4 J	5 U	5 U
Di-n-octyl phthalate	5 U	5 U	5 U	5 U	5 U	5 U
Benzo (b) fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U
Benzo (k) fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U
Benzo (a) pyrene	0 * %	0 * %	5 U	5 U	5 U	81 %
Indeno (1,2,3-cd) pyrene	5 U	5 U	5 U	5 U	5 U	5 U
Dibenz (a,h) anthracene	5 U	5 U	5 U	5 U	5 U	5 U
Benzo (g,h,i) perylene	5 U	5 U	5 U	5 U	5 U	5 U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M	001	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-2D	002	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-4M	003	W	94LE0890	05/03/94	05/06/94	05/28/94
2-GW-WM-3S	005	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-3M	006	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-3D	007	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-3D	007 MS	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-3D	007 MSD	W	94LE0890	05/02/94	05/06/94	05/28/94
2-GW-WM-4S	009	W	94LE0890	05/03/94	05/06/94	05/28/94
2-GW-WM-4D	010	W	94LE0890	05/03/94	05/06/94	05/29/94

LAB QC:

SBLK	MB1	W	94LE0890	N/A	05/06/94	05/24/94
SBLK	MB1 BS	W	94LE0890	N/A	05/06/94	05/24/94

0002

4MS096

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator (b) (4)
Date 5-25-94
Client TCB/EAL
RFW Lot # 94051449, 472, 493
Samples ALI

Parameter: BNA
Matrix: Water
Prep Batch: E890, 894
Urgency: Immediate ☒ Other

Category for Discrepancy:
☐ Log-In
☐ LIMS
☒ Analysis/Sample
☐ Project Revision
☐ Other:

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-In or Prep Group

- ☐ Missing Sample/Extract
- ☐ Wrong Sample Pulled
- ☐ Improper Bottle Type
- ☐ Container Broken
- ☐ Preservation Wrong
- ☐ Received Past Hold
- ☐ Insufficient Sample
- ☐ Label ID's Illegible

A2.

Verified By (circle):
Log-In or Prep Group
(signature) (date)

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request..
- ☐ Sampler Error on C-O-C..Transcription Error..
- ☐ Wrong Test Code, Re-Log As
- ☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/
- ☐ Re-Digest: AA/ICP/HG/
- ☐ Re-Extract: BNA/PEST/
- ☐ QC Out: SURR/MS...High/Low/<10%/Missing/2X
- ☐ QC Out: B/BS/BS/LCS/LCS-D...High/Low
- ☐ Hold Time Exceeded: Prep/Analysis/Report
- ☐ Not Amenable to Analysis
- ☒ Other (describe)

All samples were spiked with 1/2 the specified concentration of surrogate and matrix spikes. Will adjust the recoveries and note in the narrative.

B. PM Instructions For Disposition (signature/date):

- ☐ Cancel ☐ Add ☐ Subout Analysis
- ☐ Place On Hold ☐ Take Off Hold
- ☐ Change W.O. # to:
- ☐ MS/MSD on Sample, if enough sample: ORG/INORG
- ☐ MS/DUP on Sample, if enough sample: ORG/INORG
- ☐ Change Client name to:
- ☐ Wrong Test Code, Re-Log As
- ☒ Include in Narrative

Other, explain:

JUN 02 1994

C. FINAL ACTION:

a clear description of what was done for resolution when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
- ☐ LIMS Corrections Completed
- ☐ Other, explain

Incorrect volume of low level surrogate and spike STD mixes was used due to incomplete instructions on analysts daily work schedule. Corrective action taken.

Action By (name/date): Gina Osei - mensat 5/27/94
Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name):

- ☒ Initiator: (b) (4)
- ☒ Lab Manager:
- ☒ Project Mgr:
- ☒ Unit Leader:
- ☒ QA (original):
- ☐ Log-In:
- ☒ Data Reporting
- ☐ Billing:

(b) (4)

Distributed By: (signature/date) G. P. B. B. B.

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator (b) (4)
Date 5-31-94
Client TCB/EAL
RFW Lot # 44052443
Samples 04LC0844-MSIS

Parameter: BNA
Matrix: WWC
Prep Batch: 94LC0844
Urgency: Immediate / Other

Category for Discrepancy:
☐ Log-In
☐ LIMS
☒ Analysis/Sample
☐ Project Revision
☐ Other:

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-in or Prep Group

- ☐ Missing Sample/Extract
- ☐ Wrong Sample Pulled
- ☐ Improper Bottle Type
- ☐ Container Broken
- ☐ Preservation Wrong
- ☐ Received Past Hold
- ☐ Insufficient Sample
- ☐ Label ID's Illegible

A2.

Verified By (circle):
Log-in or Prep Group
(signature) (date)

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request.
- ☐ Sampler Error on C-O-C..Transcription Error..
- ☐ Wrong Test Code, Re-Log As _____
- ☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____
- ☐ Re-Digest: AA/ICP/HG/ _____
- ☐ Re-Extract: BNA/PEST/ _____
- ☐ QC Out: SURR/MS...High/Low/<10%/Missing/2X
- ☐ QC Out: B/BS/BSD/LCS/LCS-D...High/Low
- ☐ Hold Time Exceeded: Prep/Analysis/Report
- ☐ Not Amenable to Analysis
- ☒ Other (describe)

Low surrogate and spike recoveries in 94LC0844-MSIS.

See attached forms 2 & 3.

B. PM Instructions For

Disposition (signature/date):

- ☐ Cancel ☐ Add ☐ Subout Analysis
- ☐ Place On Hold ☐ Take Off Hold
- ☐ Change W.O. # to: _____
- ☐ MS/MSD on Sample _____, if enough sample: ORG/INORG
- ☐ MS/DUP on Sample _____, if enough sample: ORG/INORG
- ☐ Change Client name to: _____
- ☐ Wrong Test Code, Re-Log As _____
- ☒ Include in Narrative

Other, explain:

Dina - please investigate cause for low recoveries.

see JOR 94ms 094 abo.

8/6-94
BSD lost during extraction (check)
Cancel BSD and report the good Blank Spike as BS.

C. FINAL ACTION: a clear description of what was done for resolution, when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
- ☐ LIMS Corrections Completed
- ☐ Other, explain

Issue appears to have been a loss of extract during the extraction process noted in narrative on 6/1/94
Blank spike duplicate cancelled in narrative on 6/1/94

Action By (name/date):

Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name)

- ☒ Initiator: (b) (4)
- ☒ Lab Manager: (b) (4)
- ☒ Project Mgr: (b) (4)
- ☐ Unit Leader: (b) (4)
- ☒ QA (original): (b) (4)
- ☐ Log-In: (b) (4)
- ☐ Data Reporting: (b) (4)
- ☐ Billing: (b) (4)

Distributed By: (signature/date)







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L472

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

SEMIVOLATILE

The set of samples consisted of six (6) water samples collected on 05-03,04-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-24-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.
2. All surrogate recoveries were within EPA QC limits.
3. Matrix spike analyses are associated with RFW lot 9405L449.
4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.
5. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.
6. All internal standard area and retention time criteria were met.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

sma/bna/05-472b.cn

06.01.94.
Date

0005

RFW Batch Number: 9405L472

Roy F. Weston, Inc. - Lionville Laboratory
Semi-volatiles low concentration.
Client: TCB/BAL

Work Order: 10535001001 Page: 1a
Report Date: 05/31/94 08:14

Cust ID: 2-GW-WM-5S 2-GW-WM-5M 2-GW-WM-5D 2-GW-WM-6M 2-GW-WM-6D 2-FB-WM-5D
Sample Information RFW#: 001 002 003 004 005 006
Matrix: WATER WATER WATER WATER WATER WATER
D.F.: 1.00 1.00 1.00 1.00 1.00 1.00
Units: ug/L ug/L ug/L ug/L ug/L ug/L

Surrogate Recovery	Nitrobenzene-d5	69 %	76 %	76 %	74 %	76 %	81 %
	2-Fluorobiphenyl	70 %	73 %	60 %	67 %	72 %	68 %
	Terphenyl-d14	43 %	67 %	38 %	72 %	67 %	105 %
	Phenol-d5	88 %	89 %	78 %	92 %	63 %	80 %
	2-Fluorophenol	75 %	82 %	84 %	80 %	80 %	90 %
	2,4,6-Tribromophenol	89 %	92 %	95 %	88 %	90 %	90 %
Phenol		5 U	5 U	6 U	6 U	5 U	6 U
bis(2-Chloroethyl) ether		5 U	5 U	6 U	6 U	5 U	6 U
2-Chlorophenol		5 U	5 U	6 U	6 U	5 U	6 U
2-Methylphenol		5 U	5 U	6 U	6 U	5 U	6 U
2,2'-oxybis(1-Chloropropane)		5 U	5 U	6 U	6 U	5 U	6 U
4-Methylphenol		5 U	5 U	6 U	6 U	5 U	6 U
N-Nitroso-di-n-propylamine		5 U	5 U	6 U	6 U	5 U	6 U
Hexachloroethane		5 U	5 U	6 U	6 U	5 U	6 U
Nitrobenzene		5 U	5 U	6 U	6 U	5 U	6 U
Isophorone		5 U	5 U	6 U	6 U	5 U	6 U
2-Nitrophenol		5 U	5 U	6 U	6 U	5 U	6 U
2,4-Dimethylphenol		5 U	5 U	6 U	6 U	5 U	6 U
bis(2-Chloroethoxy) methane		5 U	5 U	6 U	6 U	5 U	6 U
2,4-Dichlorophenol		5 U	5 U	6 U	6 U	5 U	6 U
1,2,4-Trichlorobenzene		5 U	5 U	6 U	6 U	5 U	6 U
Naphthalene		5 U	5 U	6 U	6 U	5 U	6 U
4-Chloroaniline		5 U	5 U	6 U	6 U	5 U	6 U
Hexachlorobutadiene		5 U	5 U	6 U	6 U	5 U	6 U
4-Chloro-3-methylphenol		5 U	5 U	6 U	6 U	5 U	6 U
2-Methylnaphthalene		5 U	5 U	6 U	6 U	5 U	6 U
Hexachlorocyclopentadiene		5 U	5 U	6 U	6 U	5 U	6 U
2,4,6-Trichlorophenol		5 U	5 U	6 U	6 U	5 U	6 U
2,4,5-Trichlorophenol		20 U	20 U	22 U	22 U	20 U	22 U
2-Chloronaphthalene		5 U	5 U	6 U	6 U	5 U	6 U
2-Nitroaniline		20 U	20 U	22 U	22 U	20 U	22 U
Dimethylphthalate		5 U	5 U	6 U	6 U	5 U	6 U

* = Outside of EPA CLP QC limits.

RFW#:	001	002	003	004	005	006
Acenaphthylene	5 U	5 U	6 U	6 U	5 U	6 U
2,6-Dinitrotoluene	5 U	5 U	6 U	6 U	5 U	6 U
3-Nitroaniline	20 U	20 U	22 U	22 U	20 U	22 U
Acenaphthene	5 U	5 U	6 U	5 U	5 U	6 U
2,4-Dinitrophenol	20 U	20 U	22 U	22 U	20 U	22 U
4-Nitrophenol	20 U	20 U	22 U	22 U	20 U	22 U
Dibenzofuran	5 U	5 U	6 U	6 U	5 U	6 U
2,4-Dinitrotoluene	5 U	5 U	6 U	6 U	5 U	6 U
Diethylphthalate	5 U	5 U	6 U	6 U	5 U	6 U
4-Chlorophenyl-phenylether	5 U	5 U	6 U	6 U	5 U	6 U
Fluorene	5 U	5 U	6 U	6 U	5 U	6 U
4-Nitroaniline	20 U	20 U	22 U	22 U	20 U	22 U
4,6-Dinitro-2-methylphenol	20 U	20 U	22 U	22 U	20 U	22 U
N-Nitrosodiphenylamine	5 U	5 U	6 U	6 U	5 U	6 U
4-Bromophenyl-phenylether	5 U	5 U	6 U	6 U	5 U	6 U
Hexachlorobenzene	5 U	5 U	6 U	6 U	5 U	6 U
Pentachlorophenol	20 U	20 U	22 U	22 U	20 U	22 U
Phenanthrene	5 U	5 U	6 U	6 U	5 U	6 U
Anthracene	5 U	5 U	6 U	6 U	5 U	6 U
Di-n-butylphthalate	5 U	5 U	6 U	6 U	5 U	6 U
Fluoranthene	5 U	5 U	6 U	6 U	5 U	6 U
Pyrene	5 U	5 U	6 U	6 U	5 U	6 U
Butylbenzylphthalate	5 U	5 U	6 U	6 U	5 U	6 U
3,3'-Dichlorobenzidine	5 U	5 U	6 U	6 U	5 U	6 U
Benzo(a)anthracene	5 U	5 U	6 U	6 U	5 U	6 U
Chrysene	5 U	5 U	6 U	6 U	5 U	6 U
bis(2-Ethylhexyl)phthalate	2 U	5 U	6 U	6 U	5 U	6 U
Di-n-octyl phthalate	5 U	5 U	6 U	6 U	5 U	6 U
Benzo(b)fluoranthene	5 U	5 U	6 U	6 U	5 U	6 U
Benzo(k)fluoranthene	5 U	5 U	6 U	6 U	5 U	6 U
Benzo(a)pyrene	5 U	5 U	6 U	6 U	5 U	6 U
Indeno(1,2,3-cd)pyrene	5 U	5 U	6 U	6 U	5 U	6 U
Dibenz(a,h)anthracene	5 U	5 U	6 U	6 U	5 U	6 U
Benzo(g,h,i)perylene	5 U	5 U	6 U	6 U	5 U	6 U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

Report Date: 05/31/94 08:14
Page: 2a

GBLK BS

WATER

 $\mu g/L$

81	%	85	%
49	%	63	%
98	%	99	%
93	%	100	%
88	%	91	%
87	%	90	%

Phenol	5	U	92	%
bis (2-Chloroethyl) ether	5	U	88	%
2-Chlorophenol	5	U	85	%
2-Methylphenol	5	U	5	U
2, 2' -oxybis (1-Chloropropane)	5	U	5	U
4-Methylphenol	5	U	5	U
N-Nitroso-di-n-propylamine	5	U	102	%
Hexachloroethane	5	U	36	%
Nitrobenzene	5	U	5	U
Isophorone	5	U	88	%
2-Nitrophenol	5	U	5	U
2, 4-Dimethylphenol	5	U	5	U
bis (2-Chloroethoxy) methane	5	U	5	U
2, 4-Dichlorophenol	5	U	5	U
1, 2, 4-Trichlorobenzene	5	U	38	%
Naphthalene	5	U	46	%
4-Chloroaniline	5	U	11	*
Hexachlorobutadiene	5	U	5	U
4-Chloro-3-methylphenol	5	U	5	U
2-Methylnaphthalene	5	U	5	U
Hexachlorocyclopentadiene	5	U	5	U
2, 4, 6-Trichlorophenol	5	U	88	%
2, 4, 5-Trichlorophenol	20	U	20	U
2-Chloronaphthalene	5	U	5	U
2-Nitroaniline	20	U	20	U
Dimethylphtalate	5	U	5	U

* = Outside of EPA CLP QC limits.

RFW#: 94LE0890-MB1 94LE0890-MB1

Acenaphthylene	5	U	5	U
2,6-Dinitrotoluene	5	U	5	U
3-Nitroaniline	20	U	20	U
Acenaphthene	5	U	5	U
2,4-Dinitrophenol	20	U	20	U
4-Nitrophenol	20	U	20	U
Dibenzofuran	5	U	5	U
2,4-Dinitrotoluene	5	U	71	%
Diethylphthalate	5	U	84	%
4-Chlorophenyl-phenylether	5	U	5	U
Fluorene	5	U	5	U
4-Nitroaniline	20	U	20	U
4,6-Dinitro-2-methylphenol	20	U	20	U
N-Nitrosodiphenylamine	5	U	53	%
4-Bromophenyl-phenylether	5	U	5	U
Hexachlorobenzene	5	U	83	%
Pentachlorophenol	20	U	20	U
Phenanthrene	5	U	5	U
Anthracene	5	U	5	U
Di-n-butylphthalate	5	U	5	U
Fluoranthene	5	U	5	U
Pyrene	5	U	5	U
Butylbenzylphthalate	5	U	5	U
3,3'-Dichlorobenzidine	5	U	5	U
Benzo(a)anthracene	5	U	5	U
Chrysene	5	U	5	U
bis(2-Ethylhexyl)phthalate	5	U	5	U
Di-n-octyl phthalate	5	U	5	U
Benzo(b)fluoranthene	5	U	5	U
Benzo(k)fluoranthene	5	U	5	U
Benzo(a)pyrene	5	U	81	%
Indeno(1,2,3-cd)pyrene	5	U	5	U
Dibenz(a,h)anthracene	5	U	5	U
Benzo(g,h,i)perylene	5	U	5	U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S	001	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-5M	002	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-5D	003	W	94LE0890	05/04/94	05/06/94	05/24/94
2-GW-WM-6M	004	W	94LE0890	05/03/94	05/06/94	05/24/94
2-GW-WM-6D	005	W	94LE0890	05/03/94	05/06/94	05/24/94
2-FB-WM-5D	006	W	94LE0890	05/04/94	05/06/94	05/24/94

LAB QC:

SBLK	MB1	W	94LE0890	N/A	05/06/94	05/24/94
SBLK	MB1 BS	W	94LE0890	N/A	05/06/94	05/24/94

0002







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L493

W.O. #: 10535-001-001-0070-00
Date Received: 05-06-94

SEMIVOLATILE

The set of samples consisted of six (6) water samples collected on 05-04,05-94.

The samples were extracted on 05-09-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Semivolatile target compounds on 05-30,31-94 and 06-01-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were detected in these samples.
2. All surrogate recoveries were within EPA QC limits.
3. Matrix spike analyses are associated with RFW lot 9405L449.
4. Three (3) of fifteen (15) blank spike recoveries were outside EPA QC limits.

The blank spike duplicate (94LE0894-MB1 BSD) was lost during the extraction process.

5. The laboratory blank contained the common contaminants Di-n-butylphthalate and Bis(2-ethylhexyl)phthalate at levels less than 5x the CRQL.
6. All internal standard area and retention time criteria were met.
7. All samples were inadvertently spiked with one-half the specified concentration of surrogate and matrix spikes. The percent (%) recoveries were adjusted accordingly.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

06.03.94.
Date

RFW Batch Number: 94051493

Roy F. Weston, Inc. - Lionville Laboratory
Semi-volatiles low concentration.
Client: TCB/EAL

Work Order: 10535001001 Page: 1a
Report Date: 06/01/94 17:12

Cust ID: 2-GW-WM-6S 2-GW-WM-2S 2-GW-WM-1S 2-GW-WM-1M 2-DP-WM-1M 2-GW-WM-1D

Sample Information	RFW#:	Matrix:	D.F.:	Units:	001	002	003	005	006	007
					WATER	WATER	WATER	WATER	WATER	WATER
					1.00	1.00	1.00	1.00	1.00	1.00
					ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Surrogate Recovery	Nitrobenzene-d5	84	%	88	%	89	%	98	%	88	%	80	%
	2-Fluorobiphenyl	72	%	78	%	79	%	86	%	82	%	73	%
	Terphenyl-d14	83	%	52	%	95	%	99	%	96	%	76	%
	Phenol-d5	24	%	102	%	96	%	104	%	96	%	76	%
	2-Fluorophenol	87	%	92	%	93	%	98	%	88	%	85	%
	2,4,6-Tribromophenol	94	%	104	%	99	%	107	%	98	%	98	%

Phenol	6	U	2	J	5	U	2	J	2	J	6	U
bis(2-Chloroethyl) ether	6	U	6	U	5	U	6	U	6	U	6	U
2-Chlorophenol	6	U	6	U	5	U	5	J	5	J	6	U
2-Methylphenol	6	U	6	U	5	U	6	U	6	U	6	U
2,2'-oxybis(1-Chloropropane)	6	U	6	U	5	U	6	U	6	U	6	U
4-Methylphenol	6	U	24		5	U	6	U	6	U	6	U
N-Nitroso-di-n-propylamine	6	U	6	U	5	U	6	U	6	U	6	U
Hexachloroethane	6	U	6	U	5	U	6	U	6	U	6	U
Nitrobenzene	6	U	6	U	5	U	6	U	6	U	6	U
Isophorone	6	U	6	U	5	U	6	U	6	U	6	U
2-Nitrophenol	6	U	6	U	5	U	6	U	6	U	6	U
2,4-Dimethylphenol	6	U	6	U	5	U	6	U	6	U	6	U
bis(2-Chloroethoxy) methane	6	U	6	U	5	U	6	U	6	U	6	U
2,4-Dichlorophenol	6	U	6	U	5	U	1	J	1	J	6	U
1,2,4-Trichlorobenzene	6	U	6	U	5	U	6	U	6	U	6	U
Naphthalene	6	U	6	U	5	U	6	U	6	U	6	U
4-Chloroaniline	6	U	6	U	5	U	6	U	6	U	6	U
Hexachlorobutadiene	6	U	6	U	5	U	6	U	6	U	6	U
4-Chloro-3-methylphenol	6	U	6	U	5	U	6	U	6	U	6	U
2-Methylnaphthalene	6	U	6	U	5	U	6	U	6	U	6	U
Hexachlorocyclopentadiene	6	U	6	U	5	U	6	U	6	U	6	U
2,4,6-Trichlorophenol	6	U	6	U	5	U	6	U	6	U	6	U
2,4,5-Trichlorophenol	26	U	22	U	20	U	22	U	24	U	22	U
2-Chloronaphthalene	6	U	6	U	5	U	6	U	6	U	6	U
2-Nitroaniline	26	U	22	U	20	U	22	U	24	U	22	U
Dimethylphthalate	6	U	6	U	5	U	6	U	6	U	6	U

* = Outside of EPA CLP QC limits.

RFW#:

001

002

003

005

006

007

Acenaphthylene	6	U	6	U	5	U	6	U	6	U
2,6-Dinitrotoluene	6	U	6	U	5	U	6	U	6	U
3-Nitroaniline	26	U	22	U	20	U	22	U	24	U
Acenaphthene	6	U	6	U	5	U	6	U	6	U
2,4-Dinitrophenol	26	U	22	U	20	U	22	U	24	U
4-Nitrophenol	26	U	22	U	20	U	22	U	24	U
Dibenzofuran	6	U	6	U	5	U	6	U	6	U
2,4-Dinitrotoluene	6	U	6	U	5	U	6	U	6	U
Diethylphthalate	6	U	6	U	5	U	6	U	6	U
4-Chlorophenyl-phenylether	6	U	6	U	5	U	6	U	6	U
Fluorene	6	U	6	U	5	U	6	U	6	U
4-Nitroaniline	26	U	22	U	20	U	22	U	24	U
4,6-Dinitro-2-methylphenol	26	U	22	U	20	U	22	U	24	U
N-Nitrosodiphenylamine	6	U	6	U	5	U	6	U	6	U
4-Bromophenyl-phenylether	6	U	6	U	5	U	6	U	6	U
Hexachlorobenzene	6	U	6	U	5	U	6	U	6	U
Pentachlorophenol	26	U	22	U	20	U	22	U	24	U
Phenanthrene	6	U	6	U	5	U	6	U	6	U
Anthracene	6	U	6	U	5	U	6	U	6	U
Di-n-butylphthalate	1	JB	1	JB	1	JB	1	JB	1	JB
Fluoranthene	6	U	6	U	5	U	6	U	6	U
Pyrene	6	U	6	U	5	U	6	U	6	U
Butylbenzylphthalate	6	U	6	U	5	U	6	U	6	U
3,3'-Dichlorobenzidine	6	U	6	U	5	U	6	U	6	U
Benzo (a) anthracene	6	U	6	U	5	U	6	U	6	U
Chrysene	6	U	6	U	5	U	6	U	6	U
bis (2-Ethylhexyl) phthalate	1	JB	4	JB	1	JB	2	JB	0.8	JB
Di-n-octyl phthalate	6	U	6	U	5	U	6	U	6	U
Benzo (b) fluoranthene	6	U	6	U	5	U	6	U	6	U
Benzo (k) fluoranthene	6	U	6	U	5	U	6	U	6	U
Benzo (a) pyrene	6	U	6	U	5	U	6	U	6	U
Indeno (1,2,3-cd) pyrene	6	U	6	U	5	U	6	U	6	U
Dibenz (a,h) anthracene	6	U	6	U	5	U	6	U	6	U
Benzo (g,h,i) perylene	6	U	6	U	5	U	6	U	6	U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

CO/4

RFW Batch Number: 94051493

Client: TCB/EAL

Cust ID: SBLK

SBLK BS

Sample Information

RFW#: 94LE0894-MB1 94LE0894-MB1

Matrix:

WATER

WATER

D.F.: 1.00

1.00

Units:

ug/L

ug/L

Surrogate Recovery Nitrobenzene-d5
2-Fluorobiphenyl
Terphenyl-d14
Phenol-d5
2-Fluorophenol
2,4,6-Tribromophenol

Surrogate	Recovery	2,4,6-Tribromophenol
Nitrobenzene-d5	89 %	97 %
2-Fluorobiphenyl	80 %	92 %
Terphenyl-d14	100 %	100 %
Phenol-d5	79 %	106 %
2-Fluorophenol	92 %	102 %
2,4,6-Tribromophenol	96 %	101 %

Surrogate	Recovery	2,4,6-Tribromophenol
Phenol	5 U	103 %
bis(2-Chloroethyl) ether	5 U	105 %
2-Chlorophenol	5 U	103 %
2-Methylphenol	5 U	5 U
2,2'-oxybis(1-Chloropropane)	5 U	5 U
4-Methylphenol	5 U	5 U
N-Nitroso-di-n-propylamine	5 U	100 %
Hexachloroethane	5 U	65 %
Nitrobenzene	5 U	5 U
Isophorone	5 U	96 %
2-Nitrophenol	5 U	5 U
2,4-Dimethylphenol	5 U	5 U
bis(2-Chloroethoxy) methane	5 U	5 U
2,4-Dichlorophenol	5 U	5 U
1,2,4-Trichlorobenzene	5 U	80 %
Naphthalene	5 U	89 %
4-Chloroaniline	5 U	4 * %
Hexachlorobutadiene	5 U	5 U
4-Chloro-3-methylphenol	5 U	5 U
2-Methylnaphthalene	5 U	5 U
Hexachlorocyclopentadiene	5 U	5 U
2,4,6-Trichlorophenol	5 U	89 %
2,4,5-Trichlorophenol	20 U	20 U
2-Chloronaphthalene	5 U	5 U
2-Nitroaniline	20 U	20 U
Dimethylphthalate	5 U	5 U

* = Outside of EPA CLP QC limits.

Cust ID: SBLK

SBLK BS

RFW#: 94LE0894-MB1 94LE0894-MB1

Acenaphthylene	5	U	5	U
2,6-Dinitrotoluene	5	U	5	U
3-Nitroaniline	20	U	20	U
Acenaphthene	5	U	5	U
2,4-Dinitrophenol	20	U	20	U
4-Nitrophenol	20	U	20	U
Dibenzofuran	5	U	5	U
2,4-Dinitrotoluene	5	U	59 *	%
Diethylphthalate	5	U	96	%
4-Chlorophenyl-phenylether	5	U	5	U
Fluorene	5	U	5	U
4-Nitroaniline	20	U	20	U
4,6-Dinitro-2-methylphenol	20	U	20	U
N-Nitrosodiphenylamine	5	U	30 *	%
4-Bromophenyl-phenylether	5	U	5	U
Hexachlorobenzene	5	U	94	%
Pentachlorophenol	20	U	20	U
Phenanthrene	5	U	5	U
Anthracene	5	U	5	U
Di-n-butylphthalate	1	J	1	JB
Fluoranthene	5	U	5	U
Pyrene	5	U	5	U
Butylbenzylphthalate	5	U	5	U
3,3'-Dichlorobenzidine	5	U	5	U
Benzo (a) anthracene	5	U	5	U
Chrysene	5	U	5	U
bis(2-Ethylhexyl)phthalate	21		5	U
Di-n-octyl phthalate	5	U	5	U
Benzo (b) fluoranthene	5	U	5	U
Benzo (k) fluoranthene	5	U	5	U
Benzo (a) pyrene	5	U	82	%
Indeno (1,2,3-cd) pyrene	5	U	5	U
Dibenz (a,h) anthracene	5	U	5	U
Benzo (g,h,i) perylene	5	U	5	U

(1) - Cannot be separated from Diphenylamine. * = Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-6S	001	W	94LE0894	05/04/94	05/09/94	05/30/94
2-GW-WM-2S	002	W	94LE0894	05/05/94	05/09/94	05/30/94
2-GW-WM-1S	003	W	94LE0894	05/05/94	05/09/94	05/30/94
2-GW-WM-1M	005	W	94LE0894	05/05/94	05/09/94	05/30/94
2-DP-WM-1M	006	W	94LE0894	05/05/94	05/09/94	05/31/94
2-GW-WM-1D	007	W	94LE0894	05/05/94	05/09/94	06/01/94

LAB QC:

SBLK	MB1	W	94LE0894	N/A	05/09/94	06/01/94
SBLK	MB1 BS	W	94LE0894	N/A	05/09/94	05/31/94

0002

94MS096

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator

(b) (4)

Date

5-25-94

Client

TCB/EAL

RFW Lot #

94051449, 472, 493

Samples

ALI

Parameter:

BNA

Matrix:

Water

Prep Batch:

LE890, 894

Urgency:

Immediate

X Other

Category for Discrepancy:

☐ Log-In☐ LIMS☒ Analysis/Sample☐ Project Revision☐ Other:

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-in or Prep Group

- ☐ Missing Sample/Extract
☐ Wrong Sample Pulled
☐ Improper Bottle Type
☐ Container Broken
☐ Preservation Wrong
☐ Received Past Hold
☐ Insufficient Sample
☐ Label ID's Illegible

A2.

Verified By (circle):
Log-in or Prep Group
(signature) (date)

B. PM Instructions For

Disposition (signature/date): _____

- ☐ Cancel ☐ Add ☐ Subout Analysis
☐ Place On Hold ☐ Take Off Hold
☐ Change W.O. # to: _____
☐ MS/MSD on Sample _____ if enough sample: ORG/INOR
☐ MS/DUP on Sample _____ if enough sample: ORG/INOR
☐ Change Client name to: _____
☐ Wrong Test Code. Re-Log As _____
☐ Include in Narrative

Other, explain: _____

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request..
Sampler Error on C-O-C..Transcription Error..
Wrong Test Code. Re-Log As _____
☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/_____
☐ Re-Digest: AA/ICP/HG/_____
☐ Re-Extract: BNA/PEST/_____
☐ QC Out: SURR/MS...High/Low/<10%/Missing/2X
☐ QC Out: B/BS/BS/LCS/LCS-D...High/Low
☐ Hold Time Exceeded: Prep/Analysis/Report
☐ Not Amenable to Analysis
☒ Other (describe)

All samples were spiked with 1/2 the specified concentration of surrogate and matrix spikes. Will adjust the recoveries and note in the narrative.

C. FINAL ACTION: a clear description of what was done for resolution,
when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
☐ LIMS Corrections Completed
☐ Other, explain

Action By (name/date): _____

Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name)

- ☒ Initiator:
☒ Lab Manager:
☒ Project Mgr:
☒ Unit Leader:
☒ QA (original):
☐ Log-In:
☐ Data Reporting

(b) (4)

Distributed By:
(signature/date)

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator (b) (4)
Date 5-31-94
Client T3/EAL
RFW Lot # 44056443
Samples 04160844-MBIS

Parameter: BNA
Matrix: water
Prep Batch: 9460844
Urgency: Immediate ☒ Other

Category for Discrepancy:
☐ Log-In
☐ LIMS
☒ Analysis/Sample
☐ Project Revision
☐ Other:

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-In or Prep Group

- ☐ Missing Sample/Extract
- ☐ Wrong Sample Pulled
- ☐ Improper Bottle Type
- ☐ Container Broken
- ☐ Preservation Wrong
- ☐ Received Past Hold
- ☐ Insufficient Sample
- ☐ Label ID's Illegible

A2.

Verified By (circle):
Log-In or Prep Group
(signature) (date)

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

B. PM Instructions For

Disposition (signature/date): *[Signature]* 5/31/94

- ☐ Cancel ☐ Add ☐ Subout Analysis
- ☐ Place On Hold ☐ Take Off Hold *Mike Young*
- ☐ Change W.O. # to: _____
- ☐ MS/MSD on Sample _____, if enough sample: ORG/INORG
- ☐ MS/DUP on Sample _____, if enough sample: ORG/INORG
- ☐ Change Client name to: _____
- ☐ Wrong Test Code, Re-Log As _____
- ☒ Include in Narrative

Other, explain:

*Dina - please investigate
cause for low
recoveries.
see JOR 94ms 099
also.*

*8/6-94
BSX Post During extraction (check)
Cancel BSD and report the good
Blank Spike as BS.*

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request..
- ☐ Sampler Error on C-O-C..Transcription Error..
- ☐ Wrong Test Code, Re-Log As _____
- ☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____
- ☐ Re-Digest: AA/ICP/HG/ _____
- ☐ Re-Extract: BNA/PEST/ _____
- ☐ QC Out: SURR/MS...High/Low/ <10%/Missing/2X
- ☐ QC Out: B/BS/BSD/LCS/LCS-D...High/Low
- ☐ Hold Time Exceeded: Prep/Analysis/Report
- ☐ Not Amenable to Analysis
- ☒ Other (describe)

*Low surrogate and
spike recoveries in
9460844-MBIS.*

See attached forms 2 & 3.

C. FINAL ACTION: a clear description of what was done for resolution, when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
- ☐ LIMS Corrections Completed
- ☐ Other, explain

*There appears to have been a loss
of extract during the extraction process
noted in narrative on 6/1/94
blank spike duplicate cancelled
in a note in
narrative*

Action By (name/date):

Forward to Pat Feldman, QA for distribution

6/1/94

D. Distribution of Completed SDR (include name)

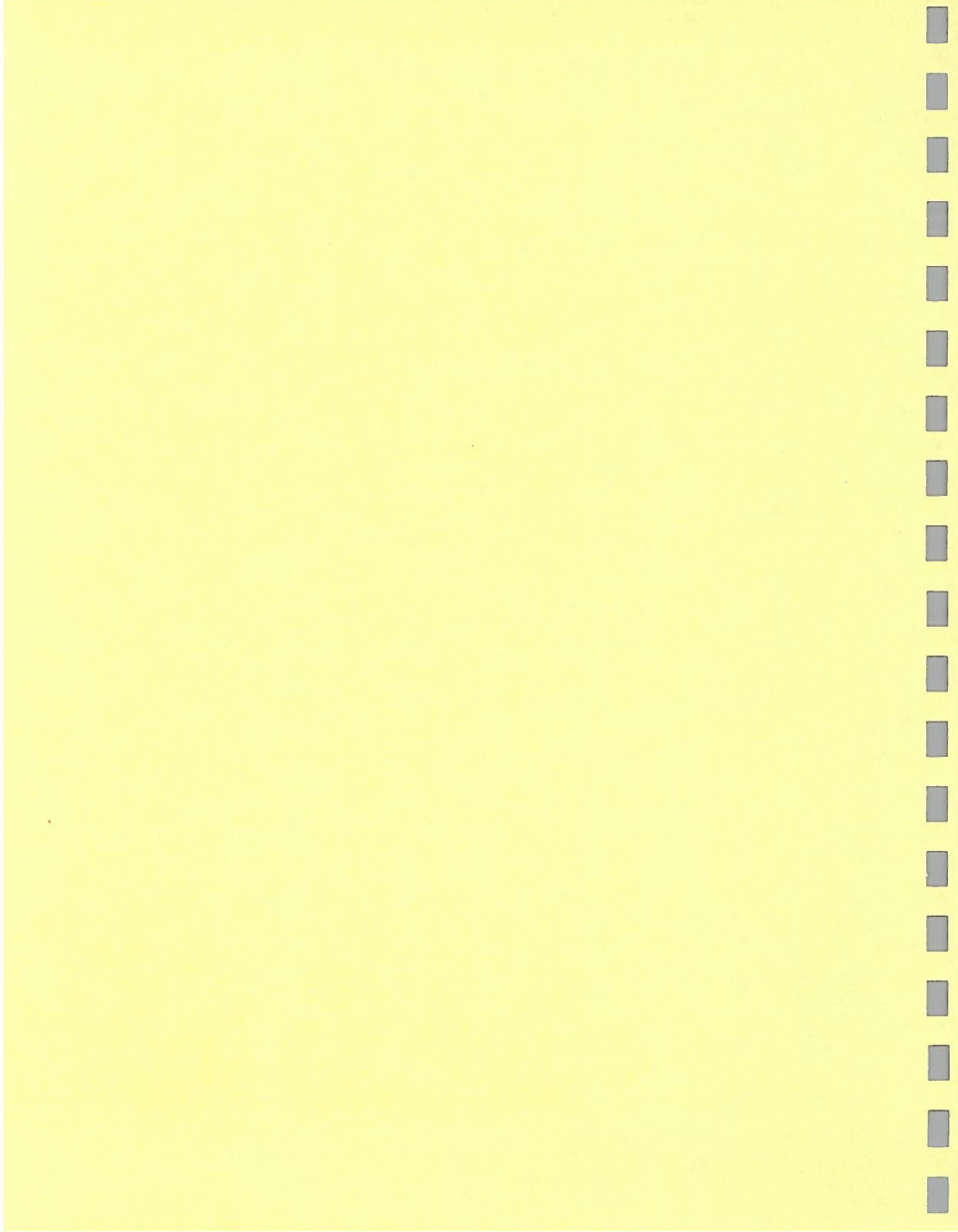
- ☒ Initiator:
- ☒ Lab Manager:
- ☒ Project Mgr:
- ☐ Unit Leader:
- ☒ QA (original):
- ☐ Log-In:
- ☐ Data Reporting
- ☐ Billing:

(b) (4)

Distributed By:
(signature/date)

0009

PESTICIDES/PCBs





GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

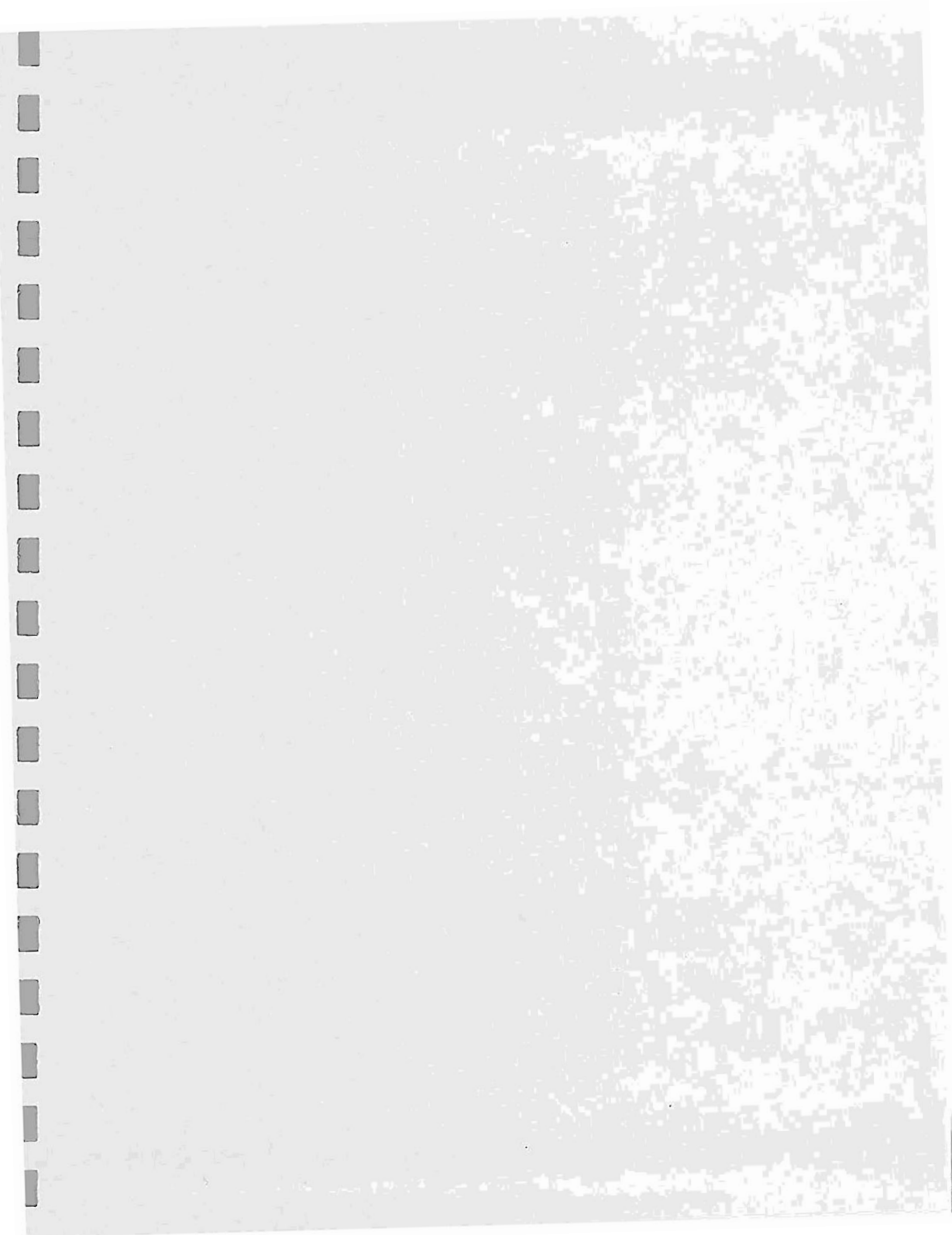
ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates spiked compound.

WESTERN

GLOSSARY OF PEST/PCH DATA

- p = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L449

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

PESTICIDE/PCB

The set of samples consisted of eight (8) water samples collected on 05-02,03-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-12,21,23-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Linearity and breakdown criteria were met for each of the analytical columns.
2. Retention time criteria were met for all compounds on both analytical columns.
3. Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
6. Seventeen (17) of forty-eight (48) surrogate recoveries were outside advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package.
7. One (1) of seven (7) blank spike recoveries was outside EPA QC limits. The Endosulfan Sulfate recoveries were outside EPA QC limits on both columns due to the florasil cleanup procedure. However, the matrix spike recoveries were within EPA QC limits for this compound. Blank spike recoveries are summarized on the Form 3 included in the data package. A Sample Discrepancy Report (SDR) has been enclosed.
8. Two (2) of fourteen (14) matrix spike recoveries were outside EPA QC limits. However, matrix spike recoveries from the alternate columns were within EPA QC limits. Matrix spike recoveries are summarized on the Form 3 included in the data package.



9. The pre-florisil portion of sample extracts were analyzed and reported due to Endosulfan Sulfate being lost in the blank spike sample due to the florisil cleanup procedure. Insufficient sample volume was available to analyze the before florisil extract of the blank and blank spike samples; therefore, florisil cleaned data were reported.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

06.01.94.
Date

0006

Sample Information	Cust ID: 2-GW-WM-2M 2-GW-WM-2D 2-GW-WM-4M 2-GW-WM-3B 2-GW-WM-3M 2-GW-WM-3D						
	RFW#:	001	002	003	005	006	007
	Matrix: D.F.:	WATER 1.00	WATER 1.00	WATER 1.00	WATER 1.00	WATER 1.00	WATER 1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Alpha-BHC		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Beta-BHC		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Delta-BHC		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
gamma-BHC (Lindane)		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Heptachlor		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Aldrin		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Heptachlor epoxide		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Endosulfan I		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Dieldrin		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
4,4'-DDE		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
Endrin		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
Endosulfan II		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
4,4'-DDD		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
Endosulfan sulfate		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
4,4'-DDT		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
Methoxychlor		0.11 U	0.11 U	0.11 U	0.10 U	0.10 U	0.10 U
Endrin ketone		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
Endrin aldehyde		0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U
alpha-Chlordane		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
gamma-Chlordane		0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U
Toxaphene		1.1 U	1.1 U	1.1 U	1.0 U	1.0 U	1.0 U
Aroclor-1016		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U
Aroclor-1221		0.44 U	0.44 U	0.44 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U
Aroclor-1242		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U
Aroclor-1248		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U
Aroclor-1254		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U
Aroclor-1260		0.22 U	0.22 U	0.22 U	0.20 U	0.20 U	0.20 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * = Outside of Advisory Limits.
P= Difference between columns exceeds 25%.

216C 5.27.94

Sample Information	RPW#	Matrix	D.P.	Units	Cust ID: 2-GW-WM-3D	2-GW-WM-3D	2-GW-WM-4B	2-GW-WM-4D	PBLKBB	PBLKBB BS
Alpha-BHC	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Beta-BHC	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Delta-BHC	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Gamma-BHC (Lindane)	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aldrin	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor epoxide	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan I	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan II	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDD	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan sulfate	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Methoxychlor	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
alpha-Chlordane	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
gamma-Chlordane	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Toxaphene	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1016	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1221	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1232	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1242	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1248	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1254	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor-1260	007 MS	WATER	1.00	ug/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
 % = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * = Outside of Advisory limits.
 P= Difference between columns exceeds 25%.

24051412

Roy F. Weston, Inc. - Lionville Laboratory
 PEST/PCB ANALYTICAL DATA PACKAGE FOR
 TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L449

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M	001		W	94LE0889	05/02/94	05/06/94
2-GW-WM-2M	001	X1	W		05/02/94	05/23/94
2-GW-WM-2D	002		W	94LE0889	05/02/94	05/06/94
2-GW-WM-2D	002	X1	W		05/02/94	05/23/94
2-GW-WM-4M	003		W	94LE0889	05/03/94	05/06/94
2-GW-WM-4M	003	X1	W		05/03/94	05/23/94
2-GW-WM-3S	005		W	94LE0889	05/02/94	05/06/94
2-GW-WM-3S	005	X1	W		05/02/94	05/21/94
2-GW-WM-3M	006		W	94LE0889	05/02/94	05/06/94
2-GW-WM-3M	006	X1	W		05/02/94	05/23/94
2-GW-WM-3D	007		W	94LE0889	05/02/94	05/06/94
2-GW-WM-3D	007	X1	W		05/02/94	05/21/94
2-GW-WM-3D	007	MS	W	94LE0889	05/02/94	05/06/94
2-GW-WM-3D	007	MS	X1	W	05/02/94	05/21/94
2-GW-WM-3D	007	MSD	W	94LE0889	05/02/94	05/06/94
2-GW-WM-3D	007	MSD	X1	W	05/02/94	05/21/94
2-GW-WM-4S	009		W	94LE0889	05/03/94	05/06/94
2-GW-WM-4S	009	X1	W		05/03/94	05/23/94
2-GW-WM-4D	010		W	94LE0889	05/03/94	05/06/94
2-GW-WM-4D	010	X1	W		05/03/94	05/23/94

LAB QC:

PBLKBE	MB1	W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1	W		N/A		05/12/94
PBLKBE	MB1 BS	W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1 BS	W		N/A		05/12/94

Handwritten: JHC
5.27.94

9402178

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING
(see other side)

Initiator Date <u>5/27/94</u> Client <u>TCB/EAL</u> RFW Lot # <u>94051449, 472, 493</u> Samples _____	(b) (4) Parameter: <u>0608H</u> Matrix: <u>H2O</u> Prep Batch: <u>94050889</u> Urgency: <u>94050896</u> <input checked="" type="checkbox"/> Immediate <input type="checkbox"/> Other	Category for Discrepancy: <input type="checkbox"/> Log-In <input type="checkbox"/> LIMS <input checked="" type="checkbox"/> Analysis/Sample <input type="checkbox"/> Project Revision <input type="checkbox"/> Other:
---	---	--

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-in or Prep Group

- Missing Sample/Extract
Wrong Sample Pulled
Improper Bottle Type
Container Broken
Preservation Wrong
Received Past Hold
Insufficient Sample
Label ID's Illegible

A2.

Verified By (circle):
Log-in or Prep Group
(signature) (date)

B. PM Instructions For

Disposition (signature/date): 3/27

- Cancel ☐ Add ☐ Subout Analysis
Place On Hold ☐ Take Off Hold
Change W.O. # to: _____
MS/MSD on Sample _____ if enough sample: ORG/INO
MS/DUP on Sample _____ if enough sample: ORG/INO
Change Client name to: _____
Wrong Test Code. Re-Log As _____
Include in Narrative

Other, explain:

A1b.

- Re-Log: Tech Profile Error..Client Changed Request..
Sampler Error on C-O-C..Transcription Error..
Wrong Test Code. Re-Log As _____

Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____

Re-Digest: AA/ICP/HG/ _____

Re-Extract: BNA/PEST/ _____

QC Out: SURR/MS...High/Low/<10%/Missing/2X

QC Out: B/BS/BSD/LCS/LCS-D...High/Low

Hold Time Exceeded: Prep/Analysis/Report

Not Amenable to Analysis

☒ Other (describe)

6400 SULFATE OUT (recovered) in 0889 BS
and 1005 ENDO SULFATE WAS
absorbed during Florisil cleanup.
Pre-Florisil reported for all extracts
+QC with exception of 0889 BIK, BS.
and 94051472-006 - due to insufficient
sample volume available.

C. FINAL ACTION: a clear description of what was done for resolution,
when it was done, and by whom it was done

Action Taken:

- Revision To Chain-of-Custody Completed
LIMS Corrections Completed
Other, explain

NOTED IN NARRATIVE

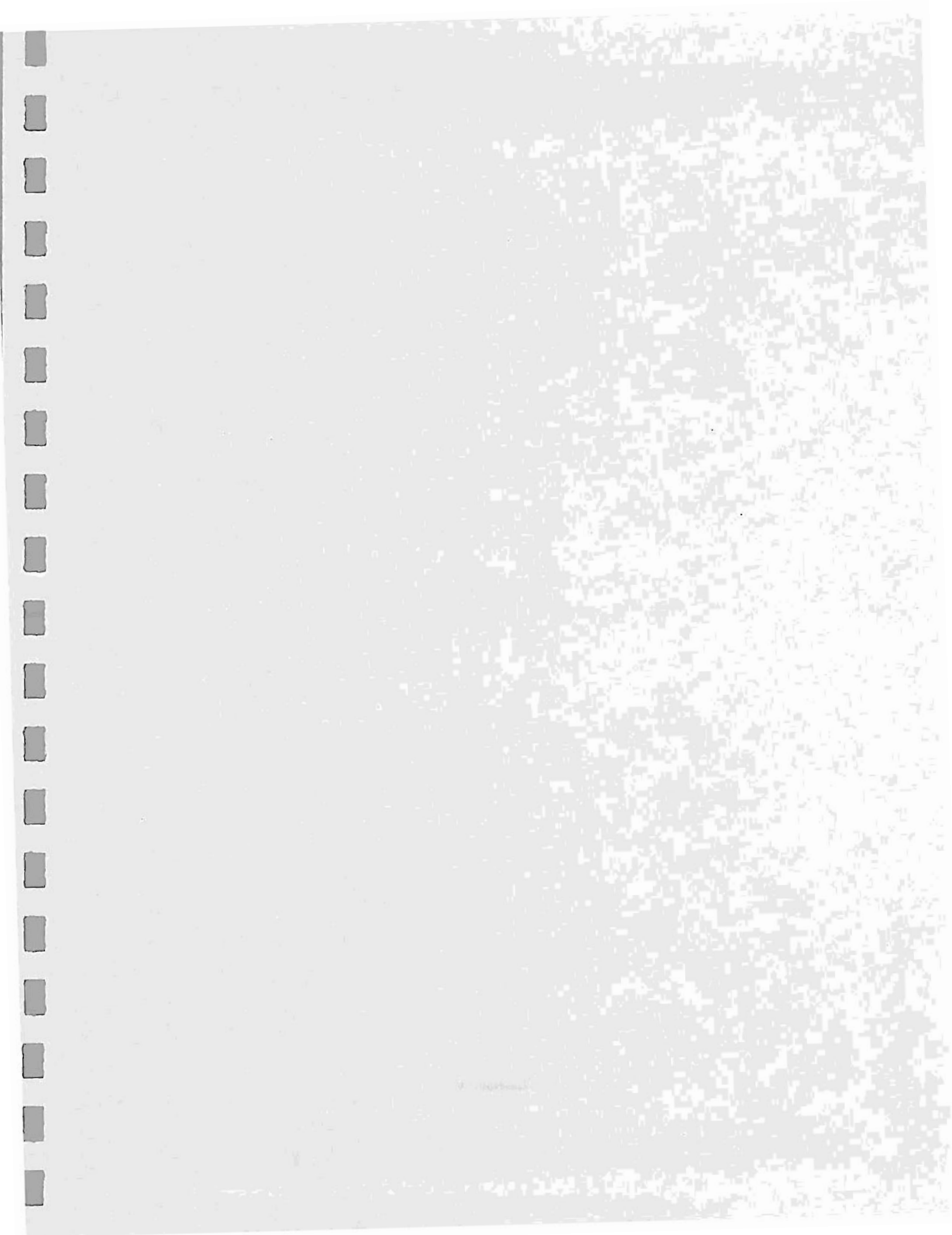
Action By (name/date): Drachale 5/27/94

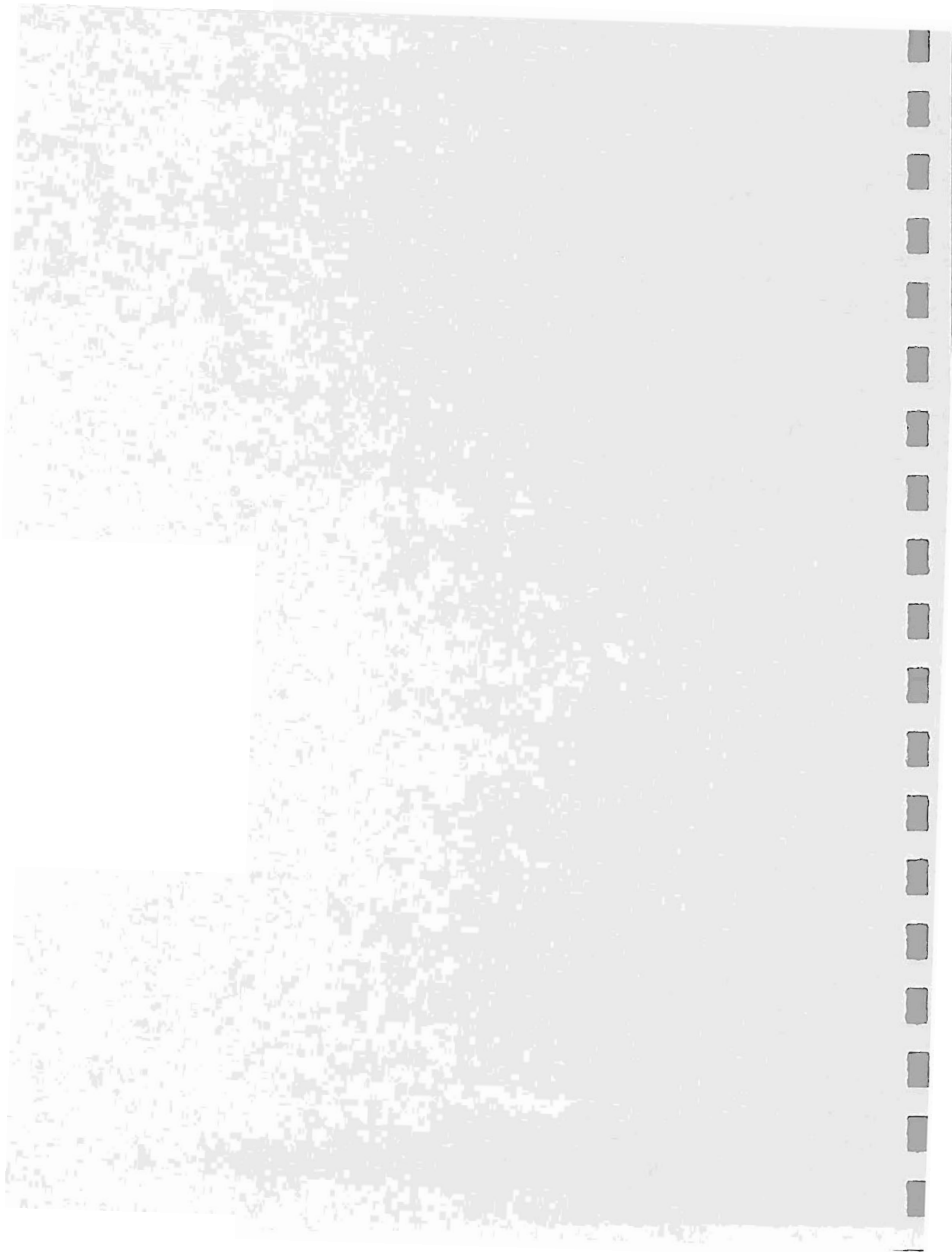
Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name)

- ☒ Initiator: (b) (4)
☒ Lab Manager
☒ Project Mgr.
☒ Unit Leader
☒ QA (original):
Log-In:
Data Report:
Billing:

Distributed By:
(signature/date)







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L472

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

PESTICIDE/PCB

The set of samples consisted of six (6) water samples collected on 05-03,04-94.

The samples were extracted on 05-06-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-12,21,23-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Linearity and breakdown criteria were met for each of the analytical columns.
2. Retention time criteria were met for all compounds on both analytical columns.
3. Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
6. Seventeen (17) of thirty-two (32) surrogate recoveries were outside the advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package.
7. One (1) of seven (7) blank spike recoveries was outside EPA QC limits. Blank spike recoveries are summarized on the Form 3 included in the package.

The pre-florisil portion of sample extracts were analyzed and reported due to Endosulfan Sulfate being lost in the blank spike sample due to the florisil cleanup procedure. Insufficient sample volume was available to analyze the before florisil extract of sample 2-FB-WM-5D and the blank and blank spike samples; therefore, florisil cleaned data were reported.



8. Recoveries of pesticides for the Florisil Cartridge Check were within EPA QC limits.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

smc/pch/05-172pp.cn

06.03.94.
Date

0006

Cust ID: 2-QW-MM-58 2-QW-MM-5M 2-QW-MM-5D 2-QW-MM-6M 2-QW-MM-6D 2-QW-MM-5D

Sample Information	RPM#	Matrix	D.F.	Units	001	002	003	004	005	006
					WATER	WATER	WATER	WATER	WATER	WATER
					1.00	1.00	1.00	1.00	1.00	1.00
					ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Alpha-BHC					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Beta-BHC					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Delta-BHC					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
gamma-BHC (Lindane)					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Heptachlor					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Aldrin					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Heptachlor epoxide					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Endosulfan I					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Dieldrin					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
4,4'-DDE					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
Endrin					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
Endosulfan II					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
4,4'-DDD					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
Endosulfan sulfate					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
4,4'-DDT					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
Methoxychlor					0.11 U	0.12 U	0.11 U	0.11 U	0.10 U	0.11 U
Endrin ketone					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
Endrin aldehyde					0.022 U	0.024 U	0.022 U	0.022 U	0.021 U	0.022 U
alpha-Chlordane					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
gamma-Chlordane					0.011 U	0.012 U	0.011 U	0.011 U	0.010 U	0.011 U
Toxaphene					1.1 U	1.2 U	1.1 U	1.1 U	1.0 U	1.1 U
Aroclor-1016					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U
Aroclor-1221					0.44 U	0.48 U	0.44 U	0.44 U	0.42 U	0.44 U
Aroclor-1232					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U
Aroclor-1242					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U
Aroclor-1246					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U
Aroclor-1254					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U
Aroclor-1260					0.22 U	0.24 U	0.22 U	0.22 U	0.21 U	0.22 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * = Outside of Advisory limits.
P= Difference between columns exceeds 25%.

CLP SUMMARY
RFW Batch Number: 94051472

ROY V. Wesson, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

Report Date: 05/26/94 17:30
Work Order: 10535-001-001-0070-00

Page: 2

Cust ID: PBLRBE

PBLRBE BS

Sample Information

RFW#: 94LE0869-MB1 94LE0869-MB1
Matrix: WATER WATER
D.F.: 1.00 1.00

Units: ug/L

ug/L

Alpha-BHC	0.010 U	0.010 U
Beta-BHC	0.010 U	0.010 U
Delta-BHC	0.010 U	0.010 U
gamma-BHC (Lindane)	0.010 U	72 *
Heptachlor	0.010 U	0.010 U
Aldrin	0.010 U	0.010 U
Heptachlor epoxide	0.010 U	82 *
Endosulfan I	0.010 U	0.010 U
Dieldrin	0.020 U	91 *
4,4'-DDE	0.020 U	113 *
Endrin	0.020 U	96 *
Endosulfan II	0.020 U	0.020 U
4,4'-DDD	0.020 U	0.020 U
Endosulfan sulfate	0.020 U	12 *
4,4'-DDT	0.020 U	0.020 U
Methoxychlor	0.10 U	0.10 U
Endrin ketone	0.020 U	0.020 U
Endrin aldehyde	0.020 U	0.020 U
alpha-Chlordane	0.010 U	0.010 U
gamma-Chlordane	0.010 U	78 *
Toxaphene	1.0 U	1.0 U
Aroclor-1016	0.20 U	0.20 U
Aroclor-1221	0.40 U	0.40 U
Aroclor-1232	0.20 U	0.20 U
Aroclor-1242	0.20 U	0.20 U
Aroclor-1248	0.20 U	0.20 U
Aroclor-1254	0.20 U	0.20 U
Aroclor-1260	0.20 U	0.20 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * = Outside of Advisory limits.
P= Difference between columns exceeds 25%.

0015

B.M.
5/23/94

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # : 9405L472

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S	001		W 94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-5S	001	X1	W	05/04/94		05/23/94
2-GW-WM-5M	002		W 94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-5M	002	X1	W	05/04/94		05/23/94
2-GW-WM-5D	003		W 94LE0889	05/04/94	05/06/94	05/23/94
2-GW-WM-5D	003	X1	W	05/04/94		05/23/94
2-GW-WM-6M	004		W 94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-6M	004	X1	W	05/03/94		05/23/94
2-GW-WM-6D	005		W 94LE0889	05/03/94	05/06/94	05/23/94
2-GW-WM-6D	005	X1	W	05/03/94		05/23/94
2-FB-WM-5D	006		W 94LE0889	05/04/94	05/06/94	05/21/94
2-FB-WM-5D	006	X1	W	05/04/94		05/21/94

LAB QC:

PBLKBE	MB1	W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1	W		N/A		05/12/94
PBLKBE	MB1 BS	W	94LE0889	N/A	05/06/94	05/12/94
PBLKBE	MB1 BS	W		N/A		05/12/94

0002

94GC178

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator (b) (4)	Parameter: <u>0608H</u>	Category for Discrepancy: <input type="checkbox"/> Log-In <input type="checkbox"/> LIMS <input checked="" type="checkbox"/> Analysis/Sample <input type="checkbox"/> Project Revision <input type="checkbox"/> Other:
Date: <u>5/27/94</u>	Matrix: <u>H2O</u>	
Client: <u>TCB/PAH</u>	Prep Batch: <u>94K0889</u>	
RFW Lot #: <u>94051449, 472, 493</u>	Urgency: <u>94K0896</u>	
Samples: _____	<input checked="" type="checkbox"/> Immediate <input type="checkbox"/> Other	

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-In or Prep Group

- ☐ Missing Sample/Extract
- ☐ Wrong Sample Pulled
- ☐ Improper Bottle Type
- ☐ Container Broken
- ☐ Preservation Wrong
- ☐ Received Past Hold
- ☐ Insufficient Sample
- ☐ Label ID's Mismatch

A2.

Verified By (circle):
Log-In or Prep Group
(signature) (date)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

B. PM Instructions For

Disposition (signature/date): 3/2/94

- ☐ Cancel ☐ Add ☐ Subout Analysis
- ☐ Place On Hold ☐ Take Off Hold
- ☐ Change W.O. # to: _____
- ☐ MS/MSD on Sample _____, if enough sample: ORG/INOR
- ☐ MS/DUP on Sample _____, if enough sample: ORG/INOR
- ☐ Change Client name to: _____
- ☐ Wrong Test Code, Re-Log As _____
- ☐ Include in Narrative
- ☐ Other, explain: _____

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request..
- ☐ Sampler Error on C-O-C..Transcription Error..
- ☐ Wrong Test Code, Re-Log As _____

- ☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____
- ☐ Re-Digest: AA/ICP/HG/ _____
- ☐ Re-Extract: BNA/PEST/ _____
- ☐ QC Out: SURR/MS...High/Low/<10%/Missing/2X
- ☐ QC Out: B/BS/BSL/LCS/LCS-D...High/Low
- ☐ Hold Time Exceeded: Prep/Analysis/Report
- ☐ Not Amenable to Analysis
- ☒ Other (describe) 12/25/2004

ENDO-SULFATE not re-analyzed in 08985
and 100% ENDO-SULFATE was
Absorbed during Florisil cleanup ,
Pre-Florisil reported for all extracts ,
+QC with exception of 08985 BLK BS .
and 94051472-006 -due to insufficient
sample volume available .

C. FINAL ACTION: a clear description of what was done for resolution,
when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
- ☐ LIMS Corrections Completed
- ☐ Other, explain

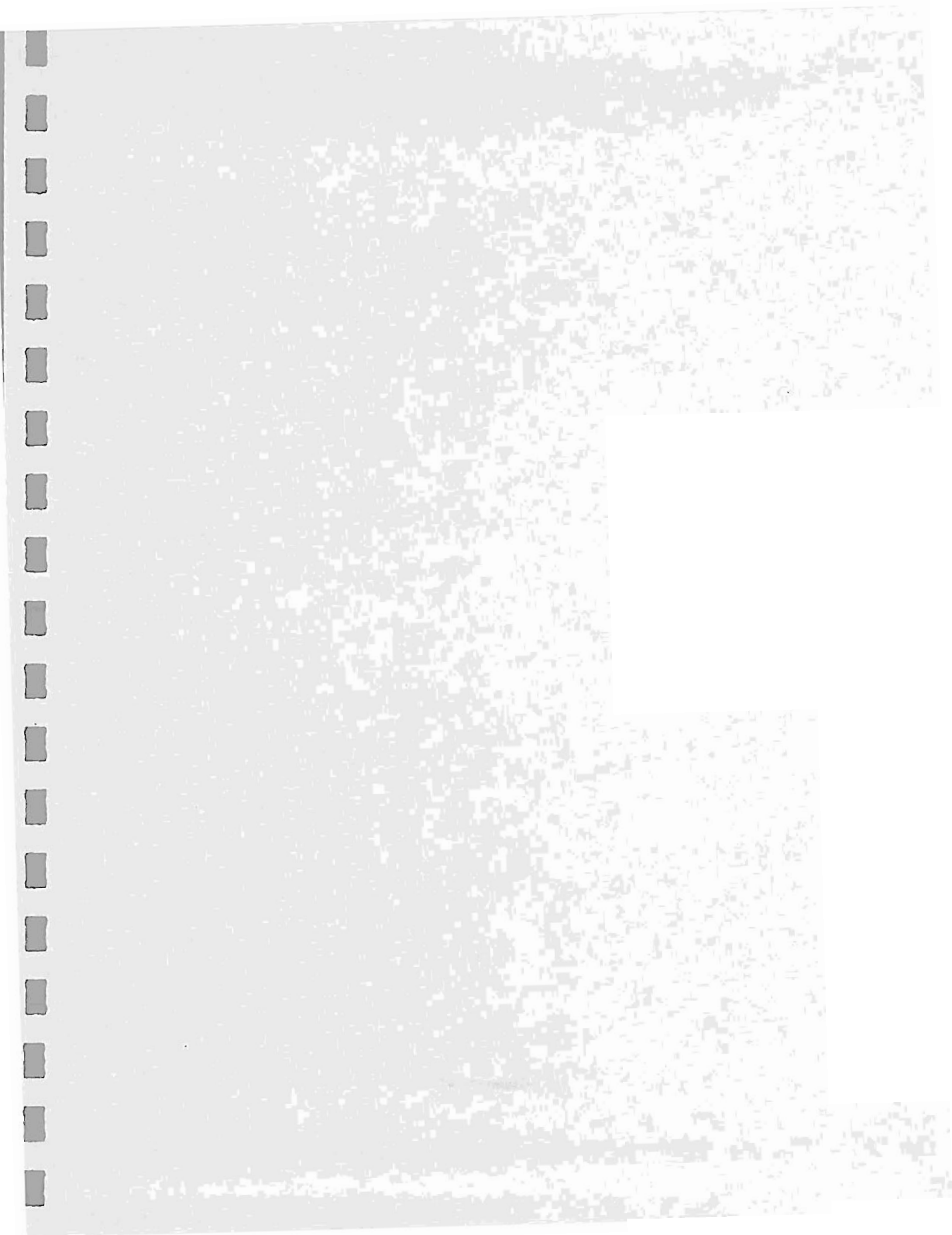
NOTED IN NARRATIVEAction By (name/date): Drucklale 5/27/94

Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name)

- ☒ Initiator: (b) (4)
- ☒ Lab Manager: (b) (4)
- ☒ Project Mgr: (b) (4)
- ☒ Unit Leader: (b) (4)
- ☒ QA (original): (b) (4)
- ☐ Log-In: (b) (4)
- ☐ Data Reporting: (b) (4)
- ☐ Billing: (b) (4)

Distributed By:
(signature/date)







ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: TCB/EAL
RFW #: 9405L493

W.O. #: 10535-001-001-0070-00
Date Received: 05-06-94

PESTICIDE/PCB

The set of samples consisted of seven (7) water samples collected on 05-04,05-94.

The samples were extracted on 05-09-94 and analyzed according to criteria set forth in Superfund Analytical Method For Low Concentration Water For Organics Analysis (10/92) for Pesticide and PCB target compounds on 05-23,24-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Linearity and breakdown criteria were met for each of the analytical columns.
2. Retention time criteria were slightly exceeded for target compounds TCX/DCB on the DB608 column in sample extract 2-GW-WM-6S analyzed on 05-23-94 at 2020. Slightly larger retention time windows were used to evaluate the data.
3. Resolution of all pesticides in the Resolution Check Standard were within EPA QC limits.
4. The RPDs of the pesticides in the Individual Mixes analyzed for calibration verification were within 25% for both analytical columns.
5. The RPDs of the pesticides in the Performance Evaluation Mixes analyzed for calibration verification were within 25% for both analytical columns.
6. Thirteen (13) of thirty-three (33) obtainable surrogate recoveries were outside the advisory EPA QC limits. Surrogate recoveries are summarized on the Form 2 included in the data package. All surrogate recoveries were outside EPA QC limits for sample extract 2-GW-WM-1S in the pre-florisil analysis. The florisil cleaned portion produced similar results; therefore, only the pre-florisil analysis was included in the package. A Sample Discrepancy Report (SDR) has been enclosed.
7. All blank spike recoveries were within EPA QC limits. Blank spike recoveries are summarized on the Form 3 included in the package.

0005



8. Endosulfan Sulfate was absorbed during florisil cleanup; therefore, the pre-florisil extracts were reported for all samples and associated QC samples. A Sample Discrepancy Report (SDR) has been enclosed.
9. Recoveries of pesticides for the Florisil Cartridge Check were within EPA QC limits.

(b) (4)



Laboratory Manager
Lionville Analytical Laboratory

sma/jkl@pctb/05-073pp.ca

06.02.94.

Date

0005A

Sample Information
 RFW#: 001
 Matrix: WATER
 D.P.: 1.00
 Units: ug/L

Sample Information	001	002	003	005	006	007
Alpha-BHC	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Beta-BHC	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Delta-BHC	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
gamma-BHC (lindane)	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Heptachlor	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Aldrin	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Heptachlor epoxide	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Endosulfan I	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Dieldrin	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
4,4'-DDR	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
Endrin	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
Endosulfan II	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
4,4'-DDD	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
Endosulfan sulfate	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
4,4'-DDT	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
Methoxychlor	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
Endrin ketone	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
Endrin aldehyde	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.021 U
alpha-Chlordane	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
gamma-Chlordane	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U
Toxaphene	1.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.0 U
Aroclor-1016	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U
Aroclor-1221	0.44 U	0.44 U	0.44 U	0.44 U	0.42 U	0.42 U
Aroclor-1232	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U
Aroclor-1242	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U
Aroclor-1248	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U
Aroclor-1254	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U
Aroclor-1260	0.22 U	0.22 U	0.22 U	0.22 U	0.21 U	0.21 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
 * = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. * = Outside of Advisory limits.
 P= Difference between columns exceeds 25%.

OK 5:30 PM

Cust ID: PBLRBR PBLRBR B8 PBLRBR B8D

Sample Information
RFW#: 94LE0896-MB1 94LE0896-MB1 94LE0896-MB1
Matrix: WATER WATER WATER
D.F.: 1.00 1.00 1.00
Units: ug/L ug/L ug/L

Alpha-BHC	0.010 U	0.010 U	0.010 U
Beta-BHC	0.010 U	0.010 U	0.010 U
Delta-BHC	0.010 U	0.010 U	0.010 U
Gamma-BHC (Lindane)	0.010 U	78 *	88 *
Heptachlor	0.010 U	0.010 U	0.010 U
Aldrin	0.010 U	0.010 U	0.010 U
Heptachlor epoxide	0.010 U	88 *	92 *
Endosulfan I	0.010 U	0.010 U	0.010 U
Dieldrin	0.020 U	96 *	98 *
4,4'-DDE	0.020 U	102 *	106 *
Endrin	0.020 U	96 *	99 *
Endosulfan II	0.020 U	0.020 U	0.020 U
4,4'-DDD	0.020 U	0.020 U	0.020 U
Endosulfan sulfate	0.020 U	77 *	79 *
4,4'-DDT	0.020 U	0.020 U	0.020 U
Methoxychlor	0.10 U	0.10 U	0.10 U
Endrin ketone	0.020 U	0.020 U	0.020 U
Endrin aldehyde	0.020 U	0.020 U	0.020 U
alpha-Chlordane	0.010 U	0.010 U	0.010 U
gamma-Chlordane	0.010 U	84 *	86 *
Toxaphene	1.0 U	1.0 U	1.0 U
Aroclor-1016	0.20 U	0.20 U	0.20 U
Aroclor-1221	0.40 U	0.40 U	0.40 U
Aroclor-1232	0.20 U	0.20 U	0.20 U
Aroclor-1242	0.20 U	0.20 U	0.20 U
Aroclor-1248	0.20 U	0.20 U	0.20 U
Aroclor-1254	0.20 U	0.20 U	0.20 U
Aroclor-1260	0.20 U	0.20 U	0.20 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not applied.
*- Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *- Outside of Advisory limits.
P= Difference between columns exceeds 25%.

9405.8094

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-6S	001	W	94LE0896	05/04/94	05/09/94	05/23/94
2-GW-WM-2S	002	W	94LE0896	05/05/94	05/09/94	05/23/94
2-GW-WM-1S	003	W	94LE0896	05/05/94	05/09/94	05/23/94
2-GW-WM-1M	005	W	94LE0896	05/05/94	05/09/94	05/23/94
2-DP-WM-1M	006	W	94LE0896	05/05/94	05/09/94	05/24/94
2-GW-WM-1D	007	W	94LE0896	05/05/94	05/09/94	05/24/94

LAB QC:

PBLKBH	MB1	W	94LE0896	N/A	05/09/94	05/23/94
PBLKBH	MB1 BS	W	94LE0896	N/A	05/09/94	05/23/94
PBLKBH	MB1 BSD	W	94LE0896	N/A	05/09/94	05/23/94

JAC 5-30-94

046077

—SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING.
(see other side)

Initiator (b) (4)
Date 5-26-94
Client TCB-PAL
RFW Lot # 94051493-003
Samples 003

Parameter: 0608H
Matrix: #20
Prep Batch: 94051493
Urgency: ☒ Immediate ☐ Other

Category for Discrepancy:
☐ Log-in
☐ LIMS
☒ Analysis/Sample
☐ Project Revision
☐ Other:

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-in or Prep Group

- ☐ Missing Sample/Extract
☐ Wrong Sample Pulled
☐ Improper Bottle Type
☐ Container Broken
☐ Preservation Wrong
☐ Received Past Hold
☐ Insufficient Sample
☐ Label ID's Illegible

A2

Verified By (circle):
Log-in or Prep Group
(signature) (date)

- ☐
☐
☐
☐
☐
☐
☐
☐

B. PM Instructions For

Disposition (signature/date): my 5/27/94

- ☐ Cancel ☐ Add ☐ Subout Analysis
☐ Place On Hold ☐ Take Off Hold
Change W.O. # to: _____
MS/MSD on Sample _____, if enough sample: ORG/INORG
MS/DUP on Sample _____, if enough sample: ORG/INORG
Change Client name to: _____
☒ Wrong Test Code, Re-Log As _____
☒ Include in Narrative

Other, explain: _____

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request.
Sampler Error on C-O-C..Transcription Error..
Wrong Test Code, Re-Log As _____
☐ Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____
☐ Re-Digest: AA/ICP/HG/ _____
☐ Re-Extract: BNA/PEST/ _____
☒ QC Out: SURR/MS...High/Low/<10%/Missing/2X
☐ QC Out: B/BS/BSD/LCS/LCS-D...High/Low
☐ Hold Time Exceeded: Prep/Analysis/Report
☐ Not Amenable to Analysis
☒ Other (describe)

Low surrogate recoveries on
both columns (50-55) for extract
493-003 in PreFlorisil extract
range (60-150). The Florisil extract
was analyzed producing similar
results (60-65). Is it necessary to
report both results?

C. FINAL ACTION: a clear description of what was done for resolution,
when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
☐ LIMS Corrections Completed
☐ Other, explain

Reported PreFlorisil only
+ NOTED narrative

(b) (4)

Action By (name/date):

Forward to Pat Feldman, QA for distribution

D. Distribution of Completed SDR (include name):

- ☒ Initiator: (b) (4)
☒ Lab Manager
☒ Project Mgr.
☒ Unit Leader
☒ QA (original)
☐ Log-In:
☐ Data Report
☐ Billing:

Distributed By:
(signature/date)

946C178

SAMPLE DISCREPANCY REPORT (SDR)

SDR IN-PROGRESS ROUTING:
(see other side)

Initiator (b) (4)	Parameter: 0608H	Category for Discrepancy: <input type="checkbox"/> Log-In <input type="checkbox"/> LIMS <input checked="" type="checkbox"/> Analysis/Sample <input type="checkbox"/> Project Revision <input type="checkbox"/> Other:
Date: 5/27/94	Matrix: #20	
Client: TCB/EAL	Prep Batch: 946C889	
RFW Lot #: 9405L449, 472, 493	Urgency: 946C896	
Samples	<input checked="" type="checkbox"/> Immediate <input type="checkbox"/> Other	

A. Reason for SDR:

A1a.

Requires Verification By (circle):
Log-in or Prep Group

- ☐ Missing Sample/Extract
- ☐ Wrong Sample Pulled
- ☐ Improper Bottle Type
- ☐ Container Broken
- ☐ Preservation Wrong
- ☐ Received Past Hold
- ☐ Insufficient Sample
- ☐ Label ID's Illegible

A2.

Verified By (circle):
Log-in or Prep Group
(signature) (date)

B. PM Instructions For
Disposition (signature/date):

- ☐ Cancel ☐ Add ☐ Subout Analysis
- ☐ Place On Hold ☐ Take Off Hold
- ☐ Change W.O. # to: _____
- ☐ MS/MSD on Sample _____, if enough sample: ORG/INOR
- ☐ MS/DUP on Sample _____, if enough sample: ORG/INOR
- ☐ Change Client name to: _____
- ☐ Wrong Test Code, Re-Log As _____
- ☐ Include in Narrative

Other, explain: _____

A1b.

- ☐ Re-Log: Tech Profile Error..Client Changed Request..
- ☐ Sampler Error on C-O-C..Transcription Error..
- ☐ Wrong Test Code, Re-Log As _____

Re-Leach: Metals/Inorg/VOA/BNA/Pest/Herb/ _____

Re-Digest: AA/ICP/HG/ _____

Re-Extract: BNA/PEST/ _____

QC Out: SURR/MS...High/Low/<10%/Missing/2X

QC Out: B/BS/BSO/LCS/LCS-D...High/Low

Hold Time Exceeded: Prep/Analysis/Report

Not Amenable to Analysis

☒ Other (describe)

END-SULFATE out/necessary in C889 BS,
and too \$-END-SULFATE was
absorbed during Florisil-cleanup,
Pre-Florisil reported for all extracts
+ QC with exception of C889 BIK, BS.
and 9405L472-006 - due to insufficient
sample volume available.

C. FINAL ACTION:

a clear description of what was done for resolution,
when it was done, and by whom it was done

Action Taken:

- ☐ Revision To Chain-of-Custody Completed
- ☐ LIMS Corrections Completed
- ☐ Other, explain

NOTED IN NARRATIVE

Action By (name/date):

Forward to Pat Feldman, QA for distribution

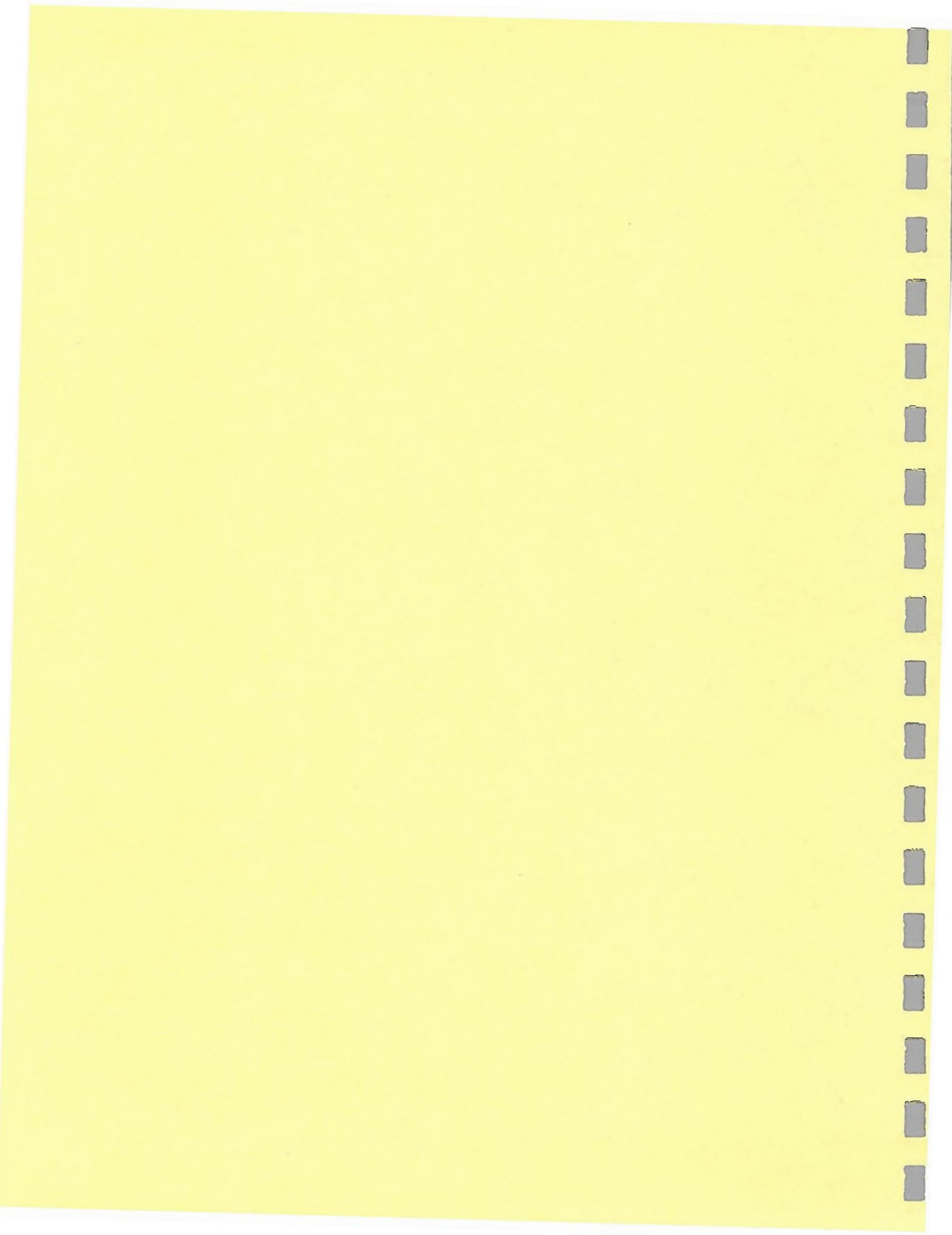
D. Distribution of Completed SDR (include name)

- ☒ Initiator: (b) (4)
- ☒ Lab Manager
- ☒ Project Mgr
- ☒ Unit Leader
- ☒ QA (original)
- ☐ Log-In:
- ☐ Data Report
- ☐ Billing:

Distributed By:
(signature/date)



METALS



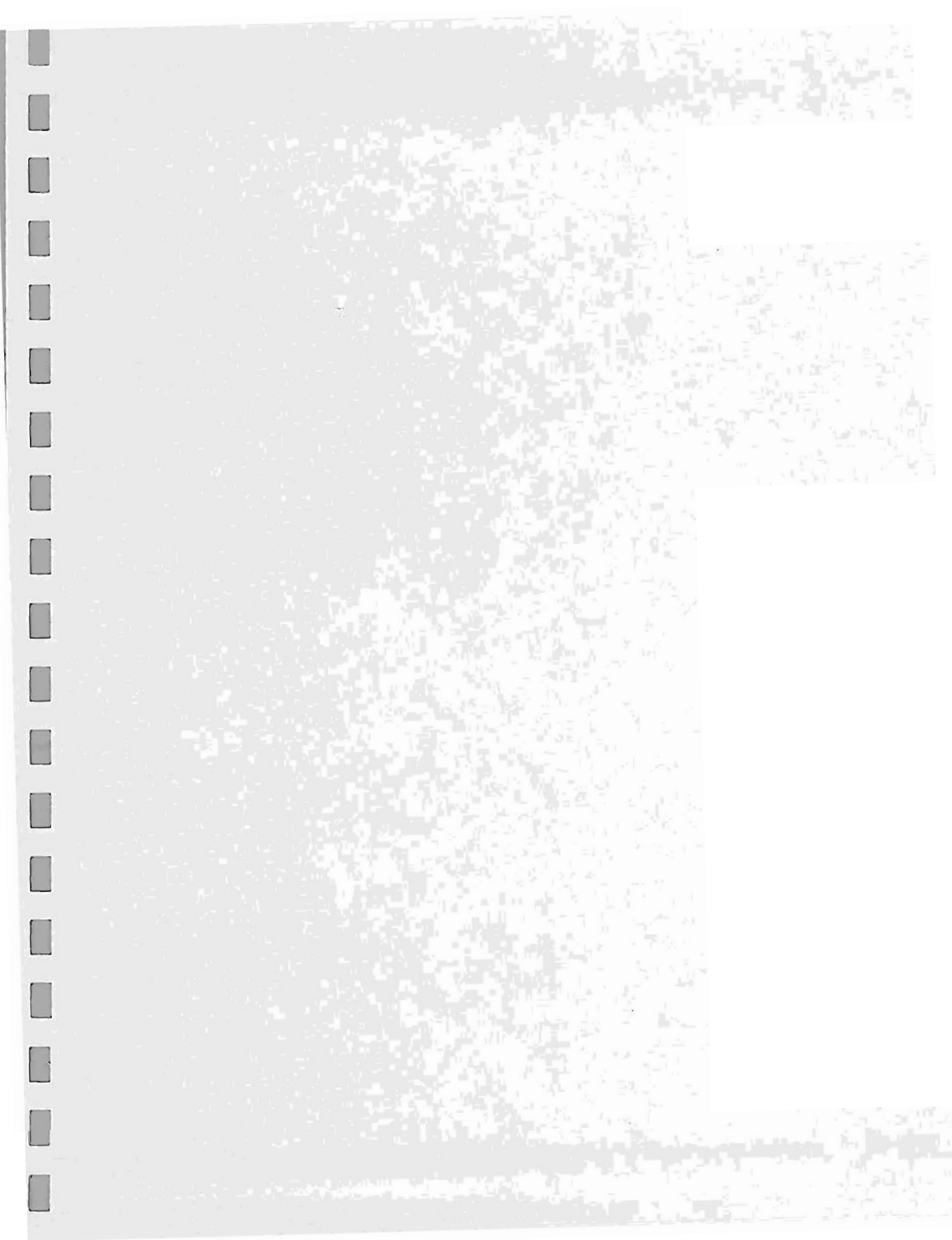
Lockheed Analytical Services
DATA QUALIFIERS FOR INORGANIC ANALYSES

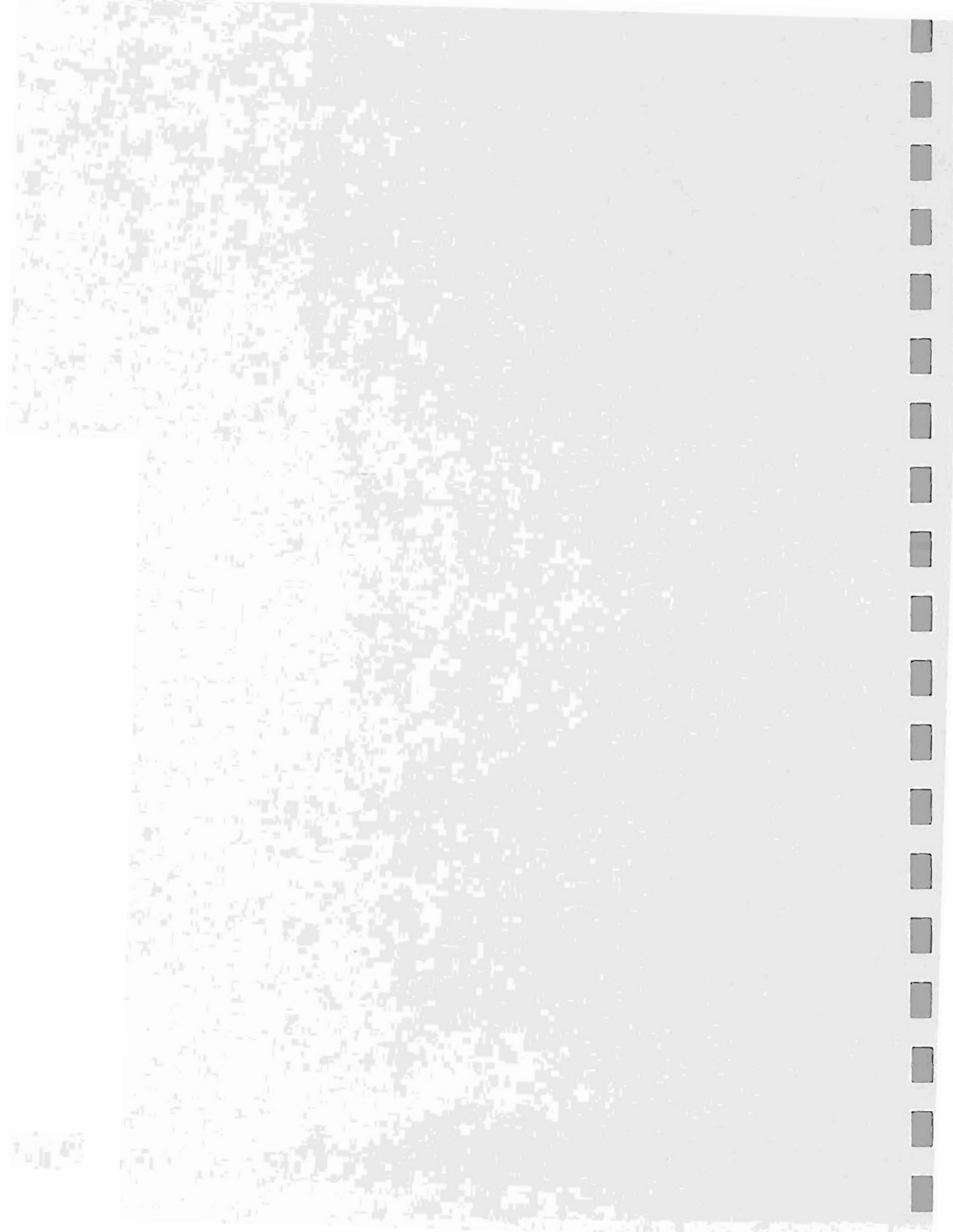
[Revised 08/28/92]

For Use on the Analytical Data Reporting Forms	
B	<i>For CLP Analyses Only</i> – Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
C	<i>For Routine, Non-CLP Analyses Only</i> – Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL).
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
H	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	<i>For CLP Analyses Only</i> – Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	<i>For CLP Reporting Only</i> – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	<i>For AAS Only</i> – Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
For Use on the QC Data Reporting Forms	
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b¹	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.









Lockheed Analytical Services
975 Kelly Johnson Drive
Las Vegas, Nevada 89119-3705

Phone: (702) 361-0220
Fax: (702) 361-6434

June 7, 1994

(b) (4)

Lionville Analytical Laboratory
208 Welsh Pool Road
Lionville, PA 19341-1313

RE: Log-in No.: L1867
 Quotation No.: Q333550
 Document File No.: 0507499

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on May 7, 1994. The temperature of the cooler/coolers upon receipt was 11 °C. All containers were properly labeled and agree with the chain-of-custody. Sample containers were received intact. Sample containers were properly preserved for the analysis requested. Sample containers had sufficient sample volume for the analysis requested. All samples were received within the analytical holding time. All discrepancies identified upon receipt of the samples have been forwarded to the client.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call James L. Jordan, at (702) 361-3955, ext. 289.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

(b) (4)

Client Services Representative

JLJ/sm

cc: Client Services
 Document Control

CASE NARRATIVE INORGANIC ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirement-

The samples were digested and analyzed as batch 505WES for ICPAES metals and 510WES for ICP-MS metals and mercury. For these batches, sample 2-GW-WM-3D (L1867-6) was used for matrix spike and duplicate analysis. All flags due to the performance of the above mentioned QCs are also associated with every sample digested with this batch.

Holding Times-

All samples were analyzed within the method-specific holding times.

Method Blanks-

The level of analytes in the method blanks were within acceptance limits.

Internal Quality Control-

All Internal Quality Control were within acceptance limits with the following exceptions:

For aluminum and iron the duplicate precision was out side the acceptance limits at 53% and 27% respectively. The poor duplicate precision is likely due to inhomogeneity of the sample with respect to these analytes.

The matrix spike recovered outside the control limits for aluminum. The acceptable recovery of the laboratory control standard (LCSW) (103.4%) and the post spike (83.5%) indicate that the analytical system was operating in control and that the out-of-control spike recovery may be attributed to the presence of matrix interferences.

Sample Results- Report information.

Due to software field size limitation, the hyphens were omitted in the client sample IDs in the report.

Lockhead Analytical Services

Log-in No.: L1867
Quotation No.: Q0333550
Document File No.: 0507499
Page 2

The following method codes are used for reporting:

ICPAES - "P"
ICP-MS - "MS"
CVAA - "AV"

The RDL reported on form X of this package are the reporting detection limits requested by the client or the instrument detection limit whichever is higher.

(b) (4)

Prepared By

June 7, 1994
Date



(b) (4)

6 May 1994

Lockheed Analytical Services

RFW #	# of Samples	Parameter
9405L449	8	TAL Metals
9405L493	3	TAL Metals
9405L472	6	TAL Metals

NOTE: Please provide an MS/Rep. on sample 9405L449-007 and 9405L449-010

0527499

CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____
Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W
SOW No.: 3/90 _____

CLIENT ID NO.	Lab Sample ID
2DPWM1M	L1867-20
2FBWM5D	L1867-15
2GWWM1D	L1867-21
2GWWM1M	L1867-19
2GWWM1S	L1867-18
2GWWM2D	L1867-2
2GWWM2M	L1867-1
2GWWM2S	L1867-17
2GWWM3D	L1867-6
2GWWM3DD	L1867-6D
2GWWM3DS	L1867-6S
2GWWM3M	L1867-5
2GWWM3S	L1867-4
2GWWM4D	L1867-9
2GWWM4M	L1867-3
2GWWM4S	L1867-8
2GWWM5D	L1867-12
2GWWM5M	L1867-11
2GWWM5S	L1867-10
2GWWM6D	L1867-14

Were ICP interelement corrections applied ? Yes/No YES
Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

TWENTY WATER SAMPLES WERE ANALYZED FOR TOTAL METALS. MATRIX SPIKE AND
DUPLICATE ANALYSES WERE PERFORMED ON SAMPLE 2-GW-WM-3D (L1867-6)

Written by : _____

Date: _____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Reviewed by: _____

Date: _____

000001

CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: L.A.S. _____ Contract: WESTON _____
Lab Code: LOCK _____ Case No.: 505WES SAS No.: _____ SDG No.: L1867W
OW No.: 3/90_

CLIENT ID NO.	Lab Sample ID
2DPWM1M	L1867-20
2FBWM5D	L1867-15
2GWWM1D	L1867-21
2GWWM1M	L1867-19
2GWWM1S	L1867-18
2GWWM2D	L1867-2
2GWWM2M	L1867-1
2GWWM2S	L1867-17
2GWWM3D	L1867-6
2GWWM3DD	L1867-6D
2GWWM3DS	L1867-6S
2GWWM3M	L1867-5
2GWWM3S	L1867-4
2GWWM4D	L1867-9
2GWWM4M	L1867-3
2GWWM4S	L1867-8
2GWWM5D	L1867-12
2GWWM5M	L1867-11
2GWWM5S	L1867-10
2GWWM6D	L1867-14

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before
application of background corrections ? Yes/No NO_

Comments:

TWENTY WATER SAMPLES WERE ANALYZED FOR TOTAL METALS. MATRIX SPIKE AND
DUPLICATE ANALYSES WERE PERFORMED ON SAMPLE 2-GW-WM-3D (L1867-6).

Written by : (b) (4)

Date:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Reviewed by: (b) (4)

Date:

000002

CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

SOW No.: 3/90_

CLIENT ID NO.
2GWWM6M
2GWWM6S

Lab Sample ID
L1867-13
L1867-16

Were ICP interelement corrections applied ? Yes/No YES
Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

TWENTY WATER SAMPLES WERE ANALYZED FOR TOTAL METALS. MATRIX SPIKE AND
DUPLICATE ANALYSES WERE PERFORMED ON SAMPLE 2-GW-WM-3D (L1867-6)

Written by : _____ Name: _____
Date: _____ Title: _____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Reviewed by: _____ Name: _____
Date: _____ Title: _____

214
JH
4/7/94

Lockheed Analytical Laboratory
SAMPLE SUMMARY REPORT (su02)
Lionville Analytical Laboratory

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
2-DP-WM-1M	L1867-20		Water	CLP ICP
	L1867-20		Water	CLP ICP-MS METALS
	L1867-20		Water	CLP MERCURY
2-FB-WM-5D	L1867-15		Water	CLP ICP
	L1867-15		Water	CLP ICP-MS METALS
	L1867-15		Water	CLP MERCURY
2-GW-WM-1D	L1867-21		Water	CLP ICP
	L1867-21		Water	CLP ICP-MS METALS
	L1867-21		Water	CLP MERCURY
2-GW-WM-1M	L1867-19		Water	CLP ICP
	L1867-19		Water	CLP ICP-MS METALS
	L1867-19		Water	CLP MERCURY
2-GW-WM-1S	L1867-18		Water	CLP ICP
	L1867-18		Water	CLP ICP-MS METALS
	L1867-18		Water	CLP MERCURY
2-GW-WM-2D	L1867-2		Water	CLP ICP
	L1867-2		Water	CLP ICP-MS METALS
	L1867-2		Water	CLP MERCURY
2-GW-WM-2M	L1867-1		Water	CLP ICP
	L1867-1		Water	CLP ICP-MS METALS
	L1867-1		Water	CLP MERCURY
2-GW-WM-2S	L1867-17		Water	CLP ICP
	L1867-17		Water	CLP ICP-MS METALS
	L1867-17		Water	CLP MERCURY
2-GW-WM-3D	L1867-6		Water	CLP ICP
	L1867-6		Water	CLP ICP-MS METALS
	L1867-6		Water	CLP MERCURY
	L1867-7		Water	NONE
2-GW-WM-3M	L1867-5		Water	CLP ICP
	L1867-5		Water	CLP ICP-MS METALS
	L1867-5		Water	CLP MERCURY
2-GW-WM-3S	L1867-4		Water	CLP ICP
	L1867-4		Water	CLP ICP-MS METALS
	L1867-4		Water	CLP MERCURY
2-GW-WM-4D	L1867-9		Water	CLP ICP
	L1867-9		Water	CLP ICP-MS METALS
	L1867-9		Water	CLP MERCURY
2-GW-WM-4M	L1867-3		Water	CLP ICP
	L1867-3		Water	CLP ICP-MS METALS
	L1867-3		Water	CLP MERCURY
2-GW-WM-4S	L1867-8		Water	CLP ICP

0527499

Lockheed Analytical Laboratory
SAMPLE SUMMARY REPORT (su02)
Lionville Analytical Laboratory

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
	L1867-8		Water	CLP ICP-MS METALS
	L1867-8		Water	CLP MERCURY
2-GW-WM-5D	L1867-12		Water	CLP ICP
	L1867-12		Water	CLP ICP-MS METALS
	L1867-12		Water	CLP MERCURY
2-GW-WM-5M	L1867-11		Water	CLP ICP
	L1867-11		Water	CLP ICP-MS METALS
	L1867-11		Water	CLP MERCURY
2-GW-WM-5S	L1867-10		Water	CLP ICP
	L1867-10		Water	CLP ICP-MS METALS
	L1867-10		Water	CLP MERCURY
2-GW-WM-6D	L1867-14		Water	CLP ICP
	L1867-14		Water	CLP ICP-MS METALS
	L1867-14		Water	CLP MERCURY
2-GW-WM-6M	L1867-13		Water	CLP ICP
	L1867-13		Water	CLP ICP-MS METALS
	L1867-13		Water	CLP MERCURY
2-GW-WM-6S	L1867-16		Water	CLP ICP
	L1867-16		Water	CLP ICP-MS METALS
	L1867-16		Water	CLP MERCURY

C527499

LOGIN CHAIN OF CUSTODY REPORT (ln01)
May 09 1994, 04:29 pm

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L1867-1 temp 9 Location: RFG02-24B	2-GW-WM-2M	02-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP		Hold:29-OCT-94		
Water 1 S CLP ICP-MS METALS		Hold:29-OCT-94		
Water 1 S CLP MERCURY		Hold:30-MAY-94		
L1867-2 temp 9 Location: RFG02-24B	2-GW-WM-2D	02-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP		Hold:29-OCT-94		
Water 1 S CLP ICP-MS METALS		Hold:29-OCT-94		
Water 1 S CLP MERCURY		Hold:30-MAY-94		
L1867-3 temp 9 Location: RFG02-24B	2-GW-WM-4M	03-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP		Hold:30-OCT-94		
Water 1 S CLP ICP-MS METALS		Hold:30-OCT-94		
Water 1 S CLP MERCURY		Hold:31-MAY-94		
L1867-4 temp 9 Location: RFG02-24B	2-GW-WM-3S	02-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP		Hold:29-OCT-94		
Water 1 S CLP ICP-MS METALS		Hold:29-OCT-94		
Water 1 S CLP MERCURY		Hold:30-MAY-94		
L1867-5 temp 9 Location: RFG02-24B	2-GW-WM-3M	02-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-6 temp 9;MS/MSD Location: RFG02-24B	2-GW-WM-3D	02-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				

C527499

LOGIN CHAIN OF CUSTODY REPORT (1n01)
May 09 1994, 04:29 pm

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L1867-7 temp 9;MS/MSD Location: RFG02-24B Water 1 S NONE	2-GW-WM-3D	02-MAY-94	07-MAY-94	04-JUN-94
L1867-8 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-4S	03-MAY-94	07-MAY-94	04-JUN-94
L1867-9 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-4D	03-MAY-94	07-MAY-94	04-JUN-94
L1867-10 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-5S	04-MAY-94	07-MAY-94	04-JUN-94
L1867-11 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-5M	04-MAY-94	07-MAY-94	04-JUN-94
L1867-12 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-5D	04-MAY-94	07-MAY-94	04-JUN-94
L1867-13 temp 9 Location: RFG02-24B Water 1 S CLP ICP	2-GW-WM-6M	03-MAY-94	07-MAY-94	04-JUN-94

1527499

LOGIN CHAIN OF CUSTODY REPORT (ln01)
May 09 1994, 04:29 pm

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-14 temp 9 Location: RFG02-24B	2-GW-WM-6D	03-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-15 temp 9 Location: RFG02-24B	2-FB-WM-5D	04-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-16 temp 9 Location: RFG02-24B	2-GW-WM-6S	04-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-17 temp 9 Location: RFG02-24B	2-GW-WM-2S	05-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-18 temp 9 Location: RFG02-24B	2-GW-WM-1S	05-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				
L1867-19 temp 9 Location: RFG02-24B	2-GW-WM-1M	05-MAY-94	07-MAY-94	04-JUN-94
Water 1 S CLP ICP				
Water 1 S CLP ICP-MS METALS				
Water 1 S CLP MERCURY				

52.7499

LOGIN CHAIN OF CUSTODY REPORT (ln01)
May 09 1994, 04:29 pm

Login Number: L1867
Account: 499 Lionville Analytical Laboratory
Project: WESTON-ICP-MS ICP MS project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L1867-20 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-DP-WM-1M	05-MAY-94	07-MAY-94	04-JUN-94
L1867-21 temp 9 Location: RFG02-24B Water 1 S CLP ICP Water 1 S CLP ICP-MS METALS Water 1 S CLP MERCURY	2-GW-WM-1D	05-MAY-94	07-MAY-94	04-JUN-94

Signature: _____

Date: _____

(b) (4)

0577449

Sample Login

Login Review Checklist

Lot Number L1867

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For an effective login review, at a minimum, five reports from the login process are required. These are the chain of custody (or equivalent), the login chain of custody report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning a review, ensure that these five components are available. For jobs with single component samples, the sample summary report may be omitted.

Sample Summary Report

Yes No

N/A

- | | | | | |
|----|--|---|---|---|
| 1. | Are all sample IDs correct? | X | — | — |
| 2. | Are all samples present? | X | — | — |
| 3. | Are all matrices correct?
(e.g., TCLP analyses should be on a TCLP leachate, field blanks should be water) | X | — | — |
| 4. | Are all analyses on the chain of custody/login quotation included? | X | — | — |
| 5. | Are analyses logged in for the correct container?
(e.g., analyses requiring preservation logged in for a preserved container and vice versa) | X | — | — |
| 6. | Are samples logged in according to laboratory batching procedures?
(e.g., TCLP regular leaching and associated metals/semivolatile organics should be logged in on the same bottle) | X | — | — |

Login Chain of Custody Report

- | | | | | |
|----|---|---|---|---|
| 1. | Are the Collect, Receive, and Due dates correct for every sample? | X | — | — |
| 2. | Have appropriate sample comments been included?
(e.g., MS/MSD designation, comments from the client concerning method modifications) | X | — | — |

Sample Receiving Checklist

- | | | | | |
|---|---|---|---|---|
| 1. | Are any discrepancies between the chain of custody and the login noted? | — | — | X |
| (e.g., client IDs different on chains of custody and bottle labels, samples not sent, samples lost from breakage) | | | | |

(b) (4)

5994

(b) (4)

16 May 94

Primary review signature

Date

Secondary review signature Date

0527499

LOCKHEED ANALYTICAL SERVICES
SAMPLE RECEIVING CHECKLIST

Client Name: Weston Job Name: L1867

COOLER CONDITION UPON RECEIPT

- temperature of cooler upon receipt: 11°C

	YES	NO	COMMENTS/DISCREPANCIES*
- custody seals intact	<u>X</u>	<u> </u>	<u> </u>
- chain of custody present	<u>X</u>	<u> </u>	<u> </u>
- blue ice (or equiv.) pres. & frozen	<u> </u>	<u>X</u>	<u>blue ice insufficient</u>
- Rad Survey completed	<u>X</u>	<u> </u>	<u> </u>

SAMPLE CONDITION UPON RECEIPT

	YES	NO	COMMENTS/DISCREPANCIES*
- all bottles labeled	<u>X</u>	<u> </u>	<u> </u>
- samples intact	<u>X</u>	<u> </u>	<u> </u>
- samples agree with the COC	<u>X</u>	<u> </u>	<u> </u>
- proper container for sample type	<u>X</u>	<u> </u>	<u> </u>
- sample volume sufficient for analysis	<u>X</u>	<u> </u>	<u> </u>
- proper pres. used and indicated	<u>X</u>	<u> </u>	<u> </u>
- VOA's contain headspace	<u> </u>	<u> </u>	<u>N/A</u>

MISCELLANEOUS ITEMS

	YES	NO	COMMENTS/DISCREPANCIES*
- samples with short holding times (48 hours or less)	<u> </u>	<u>X</u>	<u> </u>
- samples to subcontract	<u> </u>	<u>X</u>	<u> </u>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by: (b) (4) Date: 5-9-94

* Immediately notify the Client Service Department staff of any discrepancies identified for this client's samples

052749

LOCKHEED ANALYTICAL SERVICES SAMPLE RECEIVING CHECKLIST

Client Name: Weston Job Name: L1867

COOLER CONDITION UPON RECEIPT

- temperature of cooler upon receipt: 9°C

	YES	NO	COMMENTS/DISCREPANCIES*
- custody seals intact	<u>X</u>	<u> </u>	<u> </u>
- chain of custody present	<u>X</u>	<u> </u>	<u> </u>
- blue ice (or equiv.) pres. & frozen	<u> </u>	<u>X</u>	<u>blue ice insufficient</u>
- Rad Survey completed	<u>X</u>	<u> </u>	<u> </u>

SAMPLE CONDITION UPON RECEIPT

	YES	NO	COMMENTS/DISCREPANCIES*
- all bottles labeled	<u>X</u>	<u> </u>	<u> </u>
- samples intact	<u>X</u>	<u> </u>	<u> </u>
- samples agree with the COC	<u>X</u>	<u> </u>	<u> </u>
- proper container for sample type	<u>X</u>	<u> </u>	<u> </u>
- sample volume sufficient for analysis	<u>X</u>	<u> </u>	<u> </u>
- proper pres. used and indicated	<u>X</u>	<u> </u>	<u> </u>
- VOA's contain headspace	<u> </u>	<u> </u>	<u>N/A</u>

MISCELLANEOUS ITEMS

	YES	NO	COMMENTS/DISCREPANCIES*
- samples with short holding times (48 hours or less)	<u> </u>	<u>X</u>	<u> </u>
- samples to subcontract	<u> </u>	<u>X</u>	<u> </u>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by: AM Date: 5-9-94

* Immediately notify the Client Service Department staff of any discrepancies identified for this client's samples

C527499

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2DPWM1M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-20 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	78.9	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	9.1			MS
7440-39-3	Barium	520			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.0	U		MS
7440-48-4	Cobalt	2.6	B		MS
7440-50-8	Copper	1.8	B		MS
7439-89-6	Iron	57700		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	7430			MS
7440-02-0	Nickel	6.7	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	12.2	B		MS

Color Before: COLORLESS Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000003

1
INORGANIC ANALYSES DATA SHEET

2DPWM1M

006004

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2FBWM5D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER

Lab Sample ID: L1867-15 _____

Level (low/med): LOW _____

Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	42.3	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	1.0	U		MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.0	U		MS
7440-48-4	Cobalt	1.0	U		MS
7440-50-8	Copper	1.6	B		MS
7439-89-6	Iron	10.0	U	*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	1.0	U		MS
7440-02-0	Nickel	1.0	U		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	10.4	B		MS

Color Before: COLORLESS

Clarity Before: CLEAR _____

Texture: _____

Color After: COLORLESS

Clarity After: CLEAR _____

Artifacts: _____

Comments:

FORM I - IN

000005

1
INORGANIC ANALYSES DATA SHEET

2 FBWM5D

000006

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM1D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-21 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1910	-	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	28.4			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	3.4	B		MS
7440-48-4	Cobalt	2.6	B		MS
7440-50-8	Copper	8.7	B		MS
7439-89-6	Iron	518		*	MS
7439-92-1	Lead	1.5	B		MS
7439-96-5	Manganese	31.4			MS
7440-02-0	Nickel	7.3	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	12.9			MS
7440-66-6	Zinc	51.4			MS

Color Before: RED _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000007

1
INORGANIC ANALYSES DATA SHEET

2GWWM1D

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000008

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM1M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK__ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-19__

Level (low/med): LOW__ Date Received: 05/07/94

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L__

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	125	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	8.9			MS
7440-39-3	Barium	517			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.9	B		MS
7440-48-4	Cobalt	2.8	B		MS
7440-50-8	Copper	1.6	B		MS
7439-89-6	Iron	5110		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	7610			MS
7440-02-0	Nickel	7.3	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.1	B		MS
7440-66-6	Zinc	12.2	B		MS

Color Before: COLORLESS Clarity Before: CLEAR__ Texture: _____

Color After: COLORLESS Clarity After: CLEAR__ Artifacts: _____

Comments: _____

FORM I - IN

000009

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM1S

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-18 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1270		N*	MS
7440-36-0	Antimony	1.8	B		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	42.0			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	5.9	B		MS
7440-48-4	Cobalt	3.1	B		MS
7440-50-8	Copper	8.8	B		MS
7439-89-6	Iron	376		*	MS
7439-92-1	Lead	8.5			MS
7439-96-5	Manganese	154			MS
7440-02-0	Nickel	10.7	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.6	B		MS
7440-66-6	Zinc	36.4			MS

Color Before: COLORLESS _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000011

1
INORGANIC ANALYSES DATA SHEET

2GWWM1S

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000012

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM2D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-2 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	89.2	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	27.8			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.0	U		MS
7440-48-4	Cobalt	5.9	B		MS
7440-50-8	Copper	8.0	B		MS
7439-89-6	Iron	129		*	MS
7439-92-1	Lead	1.4	B		MS
7439-96-5	Manganese	53.9			MS
7440-02-0	Nickel	13.0	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.1	B		MS
7440-66-6	Zinc	66.0			MS

Color Before: COLORLESS Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS Clarity After: CLEAR _____ Artifacts: _____

Comments:

FORM I - IN

000013

1
INORGANIC ANALYSES DATA SHEET

2GWWM2D

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000014

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM2M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER

Lab Sample ID: L1867-1 _____

Level (low/med): LOW _____

Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.5	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	29.6			MS
7440-39-3	Barium	1350			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	3.9	B		MS
7440-48-4	Cobalt	8.7	B		MS
7440-50-8	Copper	1.6	B		MS
7439-89-6	Iron	7760		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	1860			MS
7440-02-0	Nickel	12.2	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	15.4	B		MS

Color Before: YELLOW _____

Clarity Before: CLEAR _____

Texture: _____

Color After: COLORLESS

Clarity After: CLEAR _____

Artifacts: _____

Comments:

FORM I - IN

000015

1

CLIENT ID NO.

000016

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM2S

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-17 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	54.3	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	7.7			MS
7440-39-3	Barium	604			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	4.3	B		MS
7440-48-4	Cobalt	4.2	B		MS
7440-50-8	Copper	3.0	B		MS
7439-89-6	Iron	58400		*	MS
7439-92-1	Lead	1.6	B		MS
7439-96-5	Manganese	15100			MS
7440-02-0	Nickel	27.3			MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.5	B		MS
7440-66-6	Zinc	20.4			MS

Color Before: YELLOW _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments:

FORM I - IN

000017

1
INORGANIC ANALYSES DATA SHEET

2GWWM2S

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000018

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM3D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-6 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1370	—	N*	MS
7440-36-0	Antimony	1.0	U	—	MS
7440-38-2	Arsenic	2.0	U	—	MS
7440-39-3	Barium	43.6	—	—	MS
7440-41-7	Beryllium	1.0	U	—	MS
7440-43-9	Cadmium	1.0	U	—	MS
7440-47-3	Chromium	8.8	B	—	MS
7440-48-4	Cobalt	4.3	B	—	MS
7440-50-8	Copper	11.1	—	—	MS
7439-89-6	Iron	1080	—	*	MS
7439-92-1	Lead	2.5	—	—	MS
7439-96-5	Manganese	49.7	—	—	MS
7440-02-0	Nickel	12.6	B	—	MS
7782-49-2	Selenium	3.0	U	—	MS
7440-22-4	Silver	1.0	U	—	MS
7440-28-0	Thallium	1.0	U	—	MS
7440-62-2	Vanadium	8.7	B	—	MS
7440-66-6	Zinc	58.2	—	—	MS

Color Before: ORANGE _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000019

1
INORGANIC ANALYSES DATA SHEET

2GWTM3D

000020

CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM3M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-5 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.1	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	10.2			MS
7440-39-3	Barium	674			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	4.4	B		MS
7440-48-4	Cobalt	3.6	B		MS
7440-50-8	Copper	2.9	B		MS
7439-89-6	Iron	2560		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	634			MS
7440-02-0	Nickel	14.0	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	3.0	B		MS
7440-66-6	Zinc	37.1			MS

Color Before: YELLOW _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments:

FORM I - IN

000021

1
INORGANIC ANALYSES DATA SHEET

2GWWM3M

000022

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM3S

Lab Name: L.E.S.A.T.

Contract: WESTON

Lab Code: LOCK

Case No.: 510WES

SAS No.:

SDG No.: L1867W

Matrix (soil/water): WATER

Lab Sample ID: L1867-4

Level (low/med): LOW

Date Received: 05/07/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	269		N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	9.8			MS
7440-39-3	Barium	531			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	7.4	B		MS
7440-48-4	Cobalt	4.9	B		MS
7440-50-8	Copper	2.1	B		MS
7439-89-6	Iron	5180		*	MS
7439-92-1	Lead	1.9	B		MS
7439-96-5	Manganese	1280			MS
7440-02-0	Nickel	19.8	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.4	B		MS
7440-66-6	Zinc	37.3			MS

Color Before: YELLOW

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

FORM I - IN

000023

1
INORGANIC ANALYSES DATA SHEET

2GWWM3S

000024

CLP

1
INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM4D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-9 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	817	-	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	32.0			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	5.6	B		MS
7440-48-4	Cobalt	1.8	B		MS
7440-50-8	Copper	13.5			MS
7439-89-6	Iron	804	-	*	MS
7439-92-1	Lead	2.2	-		MS
7439-96-5	Manganese	53.4			MS
7440-02-0	Nickel	16.0	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	8.6	B		MS
7440-66-6	Zinc	68.3			MS

Color Before: ORANGE _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000025

1

CLIENT ID NO.

2GWWM4D

Concentration Units (ug/L or mg/kg dry weight): UG/L

000026

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM4M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-3 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22.0	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	131	-		MS
7440-39-3	Barium	1120	-		MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.0	U		MS
7440-48-4	Cobalt	9.5	B		MS
7440-50-8	Copper	1.1	B		MS
7439-89-6	Iron	5460		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	131			MS
7440-02-0	Nickel	15.7	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	14.9	B		MS

Color Before: COLORLESS Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000027

1
INORGANIC ANALYSES DATA SHEET

2GWWM4M

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000028

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM4S

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-8 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.6	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	10.1	-		MS
7440-39-3	Barium	495	-		MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	3.1	B		MS
7440-48-4	Cobalt	3.2	B		MS
7440-50-8	Copper	1.8	B		MS
7439-89-6	Iron	3690		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	11900	-		MS
7440-02-0	Nickel	23.2	-		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	19.7	B		MS

Color Before: YELLOW _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000029

1
INORGANIC ANALYSES DATA SHEET

2GWWM4S

000030

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM5D

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER _____ Lab Sample ID: L1867-12 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4480	—	N*	MS
7440-36-0	Antimony	1.0	U	—	MS
7440-38-2	Arsenic	2.0	U	—	MS
7440-39-3	Barium	112	—	—	MS
7440-41-7	Beryllium	2.1	—	—	MS
7440-43-9	Cadmium	1.0	U	—	MS
7440-47-3	Chromium	33.4	—	—	MS
7440-48-4	Cobalt	25.4	B	—	MS
7440-50-8	Copper	76.4	—	—	MS
7439-89-6	Iron	6450	—	*	MS
7439-92-1	Lead	7.8	—	—	MS
7439-96-5	Manganese	218	—	—	MS
7440-02-0	Nickel	52.9	—	—	MS
7782-49-2	Selenium	3.0	U	—	MS
7440-22-4	Silver	1.0	U	—	MS
7440-28-0	Thallium	1.0	U	—	MS
7440-62-2	Vanadium	70.7	—	—	MS
7440-66-6	Zinc	230	—	—	MS

Color Before: YELLOW _____ Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS _____ Clarity After: CLEAR _____ Artifacts: _____

Comments: _____

FORM I - IN

000031

1
INORGANIC ANALYSES DATA SHEET

2GWWM5D

000032

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM5M

Lab Name: L.E.S.A.T. Contract: WESTON

Lab Code: LOCK Case No.: 510WES SAS No.: SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-11

Level (low/med): LOW Date Received: 05/07/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.9	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	56.3			MS
7440-39-3	Barium	705			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.0	U		MS
7440-48-4	Cobalt	2.8	B		MS
7440-50-8	Copper	1.2	B		MS
7439-89-6	Iron	2220		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	295			MS
7440-02-0	Nickel	6.6	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	22.0			MS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

000033

1
INORGANIC ANALYSES DATA SHEET

2GWWM5M

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000034

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM5S

Lab Name: L.E.S.A.T. Contract: WESTON

Lab Code: LOCK Case No.: 510WES SAS No.: SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-10

Level (low/med): LOW Date Received: 05/07/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	104	B	N*	MS
7440-36-0	Antimony	3.1	B		MS
7440-38-2	Arsenic	18.0			MS
7440-39-3	Barium	750			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	5.8	B		MS
7440-48-4	Cobalt	3.2	B		MS
7440-50-8	Copper	2.5	B		MS
7439-89-6	Iron	11200		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	8540			MS
7440-02-0	Nickel	21.7			MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	2.1	B		MS
7440-66-6	Zinc	13.1	B		MS

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

000035

1
INORGANIC ANALYSES DATA SHEET

2GWWM5S

000036

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM6D

Lab Name: L.E.S.A.T. Contract: WESTON

Lab Code: LOCK Case No.: 510WES SAS No.: SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-14

Level (low/med): LOW Date Received: 05/07/94

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	81.4	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	2.0	U		MS
7440-39-3	Barium	56.0			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.4	B		MS
7440-48-4	Cobalt	18.3	B		MS
7440-50-8	Copper	8.6	B		MS
7439-89-6	Iron	365		*	MS
7439-92-1	Lead	1.3	B		MS
7439-96-5	Manganese	5400			MS
7440-02-0	Nickel	12.2	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	6.4	B		MS
7440-66-6	Zinc	59.0			MS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

000037

1
INORGANIC ANALYSES DATA SHEET

2GWWM6D

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Comments:

000038

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM6M

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-13 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	102	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	38.2			MS
7440-39-3	Barium	410			MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.2	B		MS
7440-48-4	Cobalt	3.1	B		MS
7440-50-8	Copper	1.5	B		MS
7439-89-6	Iron	3570		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	758			MS
7440-02-0	Nickel	5.5	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	16.8	B		MS

Color Before: COLORLESS Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS Clarity After: CLEAR _____ Artifacts: _____

Comments:

FORM I - IN

000039

1

INORGANIC ANALYSES DATA SHEET

2GWWM6M

000040

CLP

1

INORGANIC ANALYSES DATA SHEET

CLIENT ID NO.

2GWWM6S

Lab Name: L.E.S.A.T. _____ Contract: WESTON _____

Lab Code: LOCK _____ Case No.: 510WES SAS No.: _____ SDG No.: L1867W

Matrix (soil/water): WATER Lab Sample ID: L1867-16 _____

Level (low/med): LOW _____ Date Received: 05/07/94

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34.2	B	N*	MS
7440-36-0	Antimony	1.0	U		MS
7440-38-2	Arsenic	11.4			MS
7440-39-3	Barium	155	-		MS
7440-41-7	Beryllium	1.0	U		MS
7440-43-9	Cadmium	1.0	U		MS
7440-47-3	Chromium	2.3	B		MS
7440-48-4	Cobalt	2.0	B		MS
7440-50-8	Copper	1.9	B		MS
7439-89-6	Iron	3210		*	MS
7439-92-1	Lead	1.0	U		MS
7439-96-5	Manganese	2340			MS
7440-02-0	Nickel	6.1	B		MS
7782-49-2	Selenium	3.0	U		MS
7440-22-4	Silver	1.0	U		MS
7440-28-0	Thallium	1.0	U		MS
7440-62-2	Vanadium	1.0	U		MS
7440-66-6	Zinc	22.6	-		MS

Color Before: COLORLESS Clarity Before: CLEAR _____ Texture: _____

Color After: COLORLESS Clarity After: CLEAR _____ Artifacts: _____

Comments:

FORM I - IN

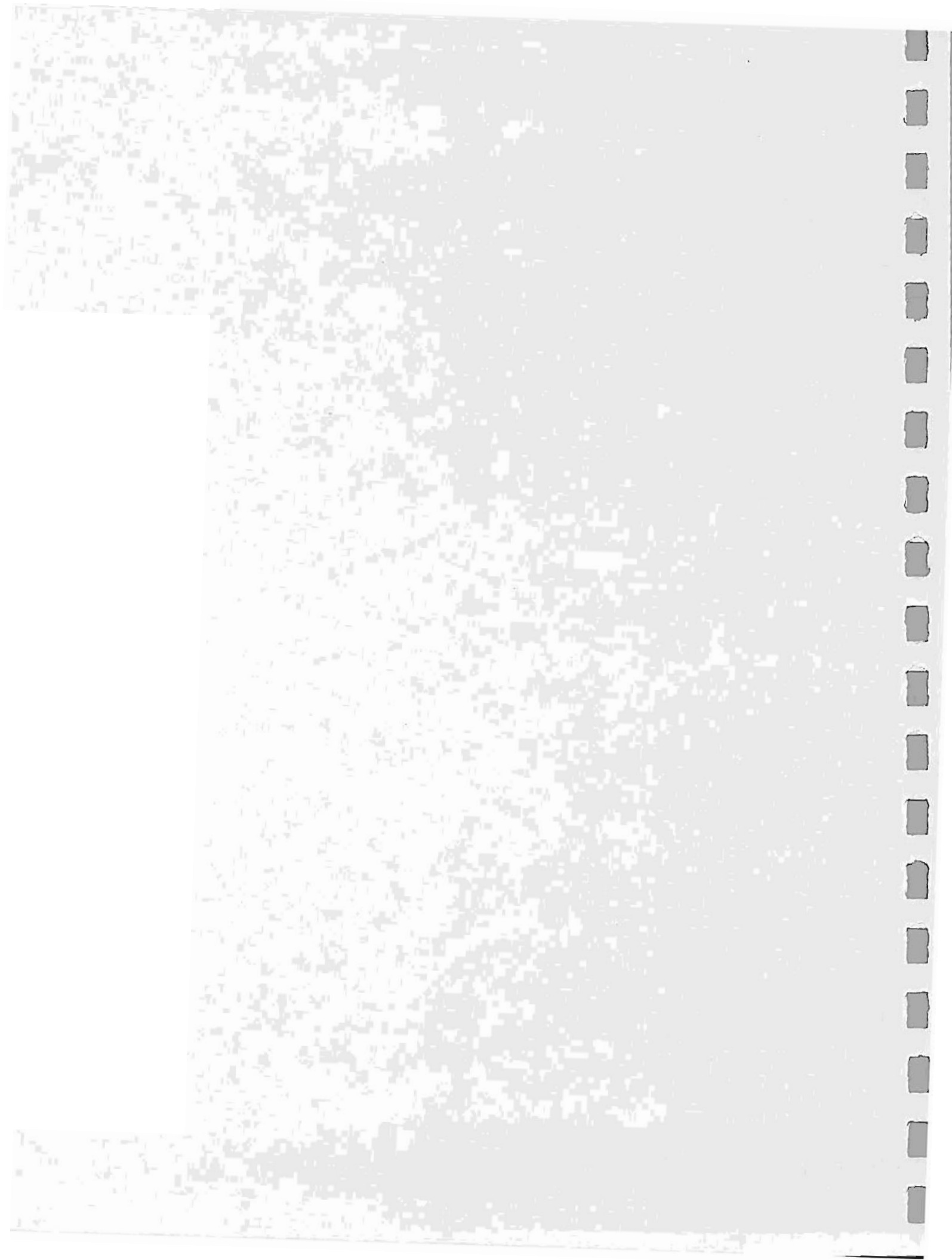
000041

1
INORGANIC ANALYSES DATA SHEET

2GWWM6S

000042

CYANIDE AND TOTAL DISSOLVED SOLIDS



ROY F. WESTON, INC.
GLOSSARY OF TERMS - INORGANIC REPORTS

DATA QUALIFIERS

- U - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * - Indicates that the original sample result is greater than 4x the spike amount added. The USEPA-CLP has determined that spike results on samples where this occurs may be unreliable and therefore, the control limits are not applicable.

ABBREVIATIONS

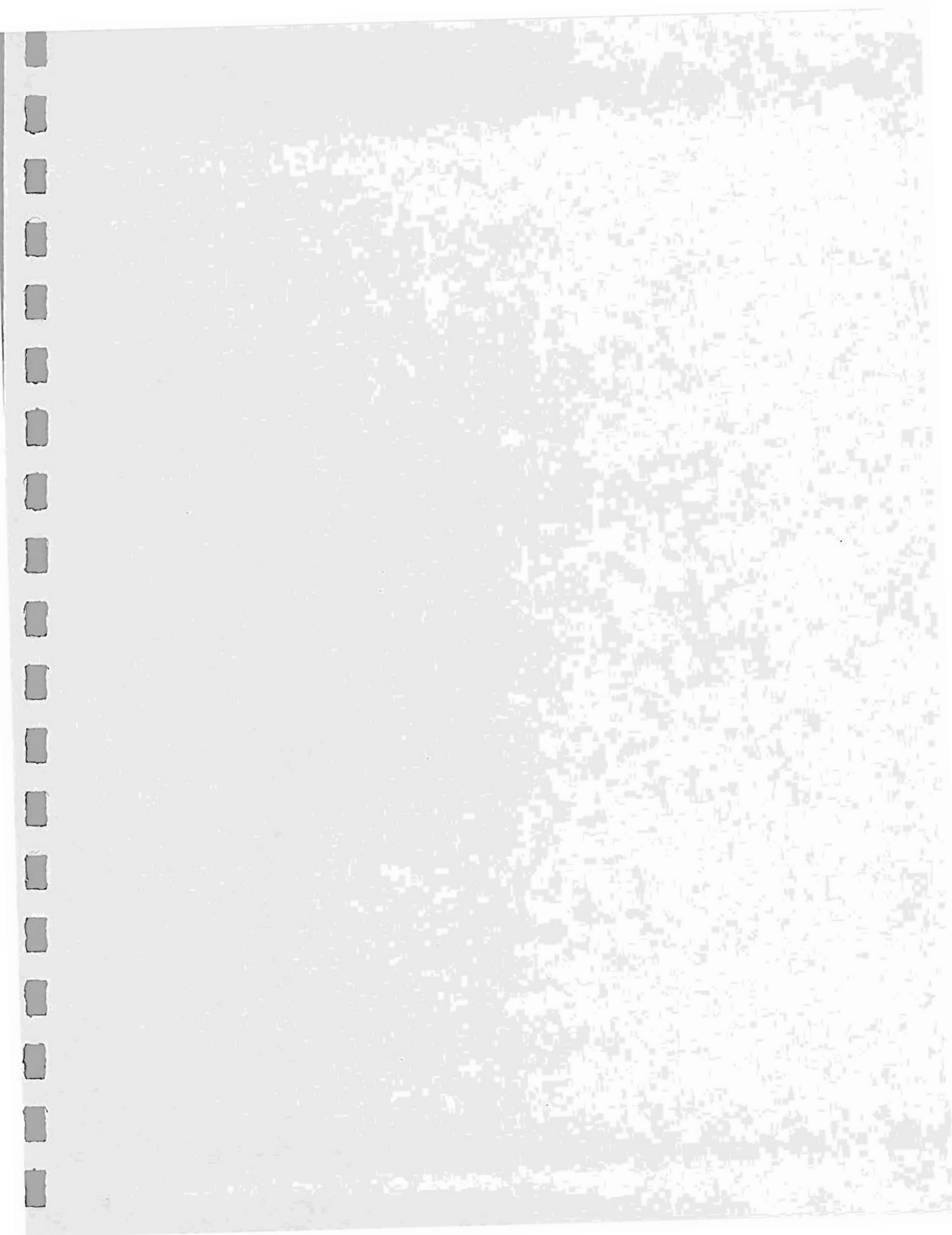
- MB - Method or preparation blank.
- MS - Matrix Spike.
- MSD - Matrix Spike Duplicate.
- REP - Sample Replicate.
- LC - Indicates a method LCS or Blank Spike.
- NC - Not calculable, result below the detection limit.

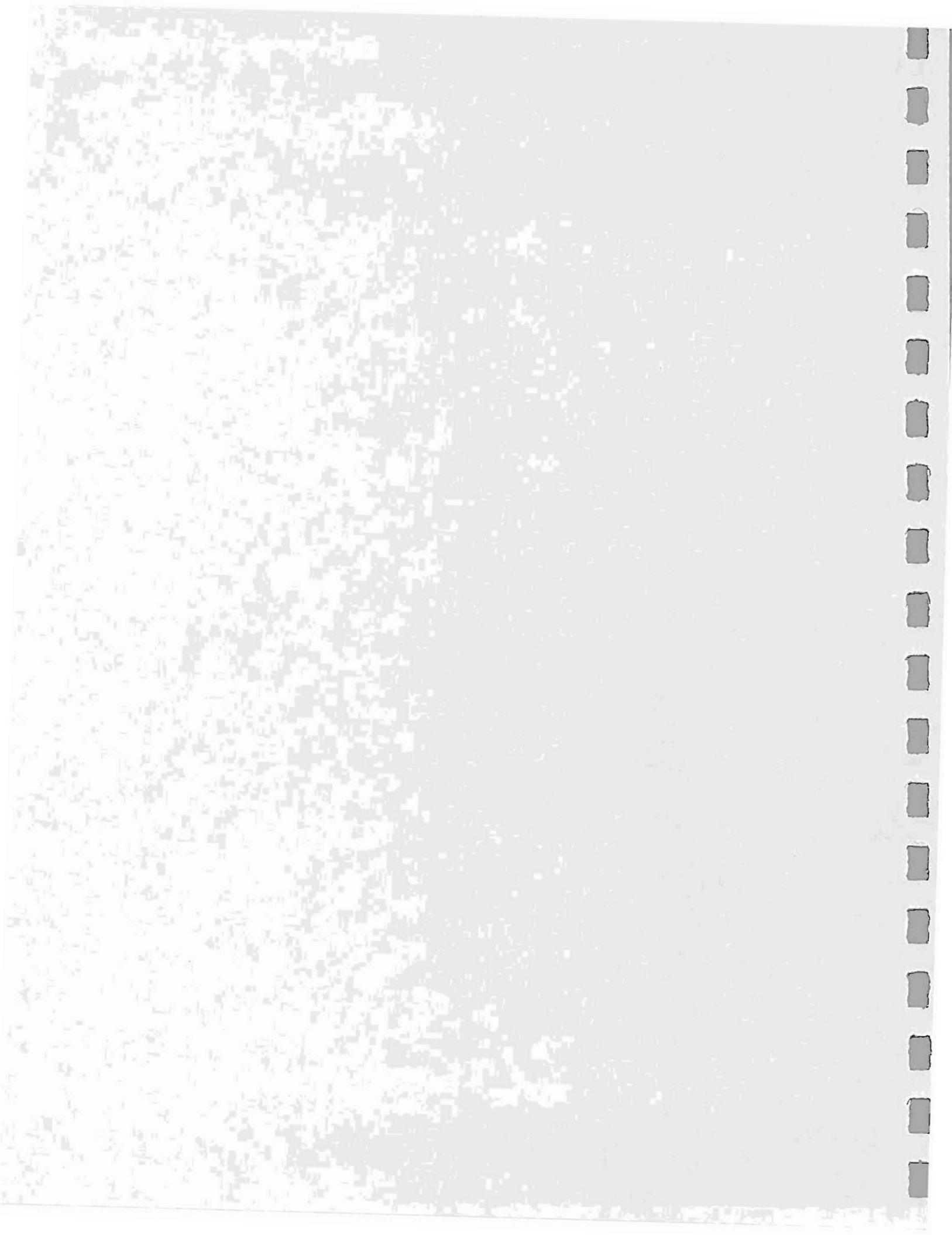
A suffix of -R or -S following these codes indicates a replicate or spike analysis respectively.

NOTES

For solid samples, all results are reported on a dry weight basis with the exception of Extractable Organic Halides, which are reported on a wet weight basis.









ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

****REVISION****

Client : TCB/EAL
RFW# : 9405L449

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

INORGANIC

This report revised to correct date received on the labchron and chain of custody.

1. All sample holding times as required by the method were met.
2. All preparation blank results were below the required detection limits.
3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
5. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.
6. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
7. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

(b) (4)

Laboratory Manager ✓
Lionville Analytical Laboratory

6.3.94
Date

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/20/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L449

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	2-GW-WM-2M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	509	MG/L	5.0	1.0
-002	2-GW-WM-2D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	134	MG/L	5.0	1.0
-003	2-GW-WM-4M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	442	MG/L	5.0	1.0
-005	2-GW-WM-3S	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	872	MG/L	5.0	1.0
-006	2-GW-WM-3M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	644	MG/L	5.0	1.0
-007	2-GW-WM-3D	Cyanide, Total	10.0	u UG/L	10.0	1.0
		Total Dissolved Solids	313	MG/L	5.0	1.0
-009	2-GW-WM-4S	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	1080	MG/L	5.0	1.0
-010	2-GW-WM-4D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	189	MG/L	5.0	1.0

ROY F. WESTON INC.

INORGANIC METHOD BLANK DATA SUMMARY PAGE 05/20/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L449

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK1	94LC121-MB1	Cyanide, Total	5.0	u	UG/L	1.0
BLANK10	94LSS082-MB1	Total Dissolved Solids	5.0	u	MG/L	1.0
BLANK1	94LC122-MB1	Cyanide, Total	5.0	u	UG/L	1.0

ROY F. WESTON INC.

INORGANIC ACCURACY REPORT 05/20/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L449

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-007	2-GW-WM-3D	Cyanide, Total	89.1	10.0 u	100	89.1	1.0
		Cyanide, Total MSD	94.4	10.0 u	100	94.4	1.0
-010	2-GW-WM-4D	Cyanide, Total	48.0	5.0 u	50.0	96.1	1.0
		Cyanide, Total MSD	49.7	5.0 u	50.0	99.3	1.0
BLANK10	94LSS082-MB1	Total Dissolved Solids	98.0	5.0 u	100	98.0	1.0
		Total Dissolved Solids	97.0	5.0 u	100	97.0	1.0

ROY P. WESTON INC.

INORGANIC DUPLICATE SPIKE REPORT 05/20/94

CLIENT: TCS/EAL

WESTON BATCH #: 9405L449

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		RPD
			%RECOV	%RECOV	
-007	2-GW-WM-3D	Cyanide, Total	89.1	94.4	5.8
-010	2-GW-WM-4D	Cyanide, Total	96.1	99.3	3.3
LCS2	94LC121-LC2	Cyanide, Total LCS	91.8	94.1	2.4
BLANK10	94LSS082-MB1	Total Dissolved Solids	98.0	97.0	1.0
LCS2	94LC122-LC2	Cyanide, Total LCS	97.2	98.9	1.7

ROY F. WESTON INC.

INORGANIC PRECISION REPORT 05/20/94

CLIENT: TCB/EAL

WESTON BATCH #: 94051449

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	%RPD	DILUTION FACTOR (REP)
-007REP	2-GW-WM-3D	Cyanide, Total	10.0 u	10.0 u	NC	1.0
		Total Dissolved Solids	313	325	3.8	1.0
-010REP	2-GW-WM-4D	Cyanide, Total	5.0 u	5.0 u	NC	1.0

ROY F. WESTON INC.

INORGANIC LABORATORY CONTROL STANDARDS REPORT 05/20/94

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCS1	94LC121-LC1	Cyanide, Total LCS	91.8	100	UG/L	91.8
LCS2	94LC121-LC2	Cyanide, Total LCS	94.1	100	UG/L	94.1
LCS1	94LC122-LC1	Cyanide, Total LCS	97.2	100	UG/L	97.2
LCS2	94LC122-LC2	Cyanide, Total LCS	98.9	100	UG/L	98.9

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-2M						
TOTAL CYANIDE	001	W	94LC121	05/02/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	001	W	94LSS082	05/02/94	05/05/94	05/06/94
2-GW-WM-2D						
TOTAL CYANIDE	002	W	94LC121	05/02/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	002	W	94LSS082	05/02/94	05/05/94	05/06/94
2-GW-WM-4M						
TOTAL CYANIDE	003	W	94LC121	05/03/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	003	W	94LSS082	05/03/94	05/05/94	05/06/94
2-GW-WM-3S						
TOTAL CYANIDE	005	W	94LC121	05/02/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	005	W	94LSS082	05/02/94	05/05/94	05/06/94
2-GW-WM-3M						
TOTAL CYANIDE	006	W	94LC121	05/02/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	006	W	94LSS082	05/02/94	05/05/94	05/06/94
2-GW-WM-3D						
TOTAL CYANIDE	007	W	94LC122	05/02/94	05/12/94	05/13/94
TOTAL CYANIDE	007 REP	W	94LC122	05/02/94	05/12/94	05/13/94
TOTAL CYANIDE	007 MS	W	94LC122	05/02/94	05/12/94	05/13/94
TOTAL CYANIDE	007 MSD	W	94LC122	05/02/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	007	W	94LSS082	05/02/94	05/05/94	05/06/94
TOTAL DISSOLVED SOLI	007 REP	W	94LSS082	05/02/94	05/05/94	05/06/94
2-GW-WM-4S						
TOTAL CYANIDE	009	W	94LC121	05/03/94	05/12/94	05/12/94

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/03/94

RFW LOT # :9405L449

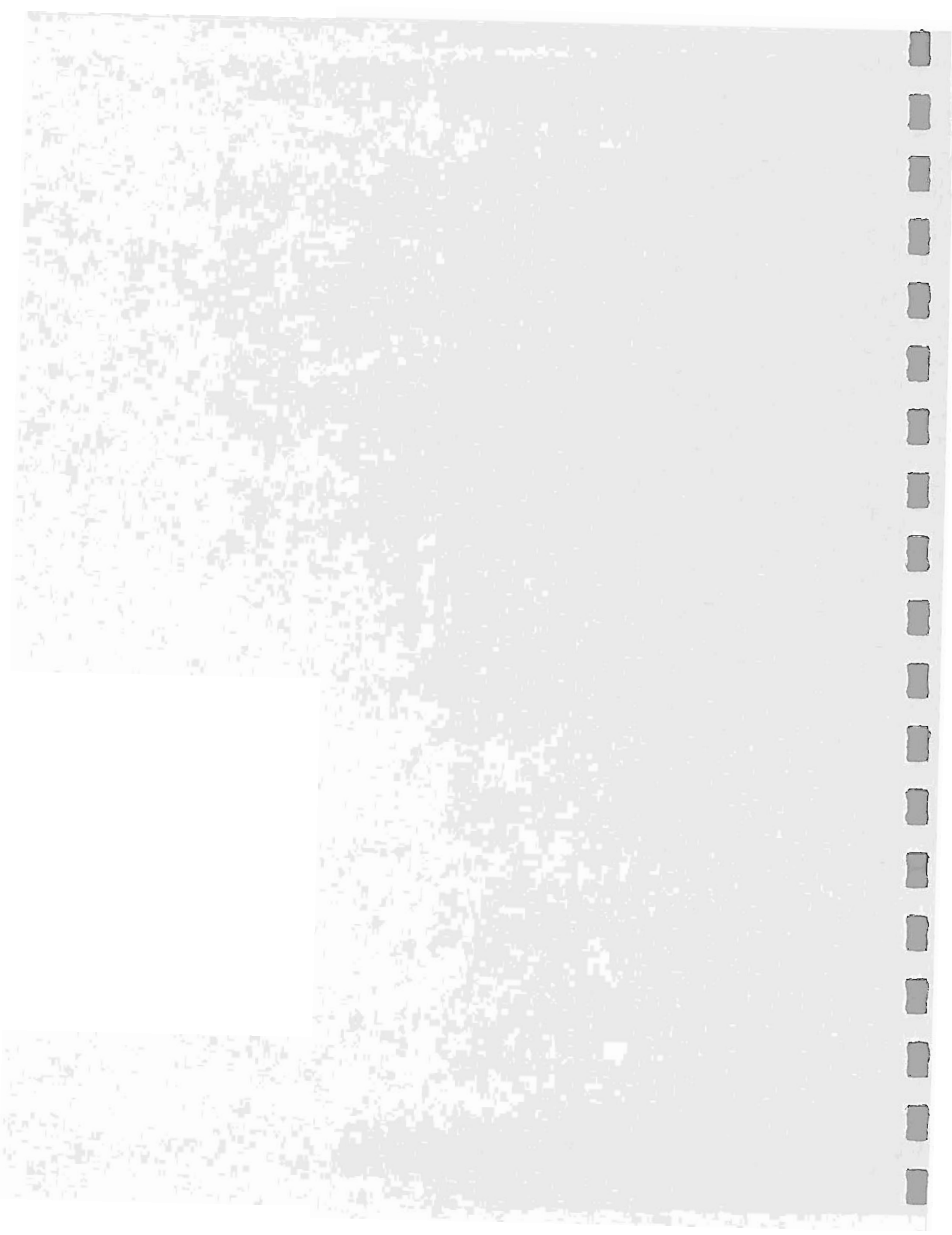
CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL DISSOLVED SOLI	009	W	94LSS082	05/03/94	05/05/94	05/06/94
2-GW-WM-4D						
TOTAL CYANIDE	010	W	94LC121	05/03/94	05/12/94	05/12/94
TOTAL CYANIDE	010 REP	W	94LC121	05/03/94	05/12/94	05/12/94
TOTAL CYANIDE	010 MS	W	94LC121	05/03/94	05/12/94	05/12/94
TOTAL CYANIDE	010 MSD	W	94LC121	05/03/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	010	W	94LSS082	05/03/94	05/05/94	05/06/94

LAB QC:

TOTAL CYANIDE	LC1 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	LC2 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	MB1	W	94LC121	N/A	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	MB1	W	94LSS082	N/A	05/05/94	05/06/94
TOTAL DISSOLVED SOLI	MB1 BS	W	94LSS082	N/A	05/05/94	05/06/94
TOTAL DISSOLVED SOLI	MB1 BSD	W	94LSS082	N/A	05/05/94	05/06/94
TOTAL CYANIDE	LC1 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	LC2 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	MB1	W	94LC122	N/A	05/12/94	05/13/94









ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client : TCB/EAL
RFW# : 9405L472

W.O. #: 10535-001-001-0070-00
Date Received: 05-04-94

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by the method were met.
2. All preparation blank results were below the required detection limits.
3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
6. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

5.25.94
Date

ROY P. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	2-GW-WM-5S	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	1000	MG/L	5.0	1.0
-002	2-GW-WM-5M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	280	MG/L	5.0	1.0
-003	2-GW-WM-5D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	220	MG/L	5.0	1.0
-004	2-GW-WM-6M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	210	MG/L	5.0	1.0
-005	2-GW-WM-6D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	260	MG/L	5.0	1.0
-006	2-PB-WM-5D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	5.0	MG/L	5.0	1.0

ROY P. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 94051472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	94LC121-MB1	Cyanide, Total	5.0	u UG/L	5.0	1.0
BLANK10	94LSS083-MB1	Total Dissolved Solids	5.0	u MG/L	5.0	1.0
BLANK1	94LC122-MB1	Cyanide, Total	5.0	u UG/L	5.0	1.0

ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
BLANK10	94LSS083-MB1	Total Dissolved Solids	99	5.0 u	100	99.0	1.0
		Total Dissolved Solids	96	5.0 u	100	96.0	1.0

ROY F. WESTON INC.

INORGANICS DUPLICATE SPIKE REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
LCS2	94LC121-LC2	Cyanide, Total LCS	91.8	94.1	2.4
BLANK10	94LS5083-MB1	Total Dissolved Solids	99.0	96.0	3.1
LCS2	94LC122-LC2	Cyanide, Total LCS	97.2	98.9	1.7

ROY F. WESTON INC.

INORGANICS PRECISION REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-005REP	2-GW-WM-6D	Total Dissolved Solids	260	270	2.6	1.0

ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/25/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L472

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
*****	*****	*****	*****	*****	*****	*****
LCS1	94LC121-LC1	Cyanide, Total LCS	92	100	UG/L	91.8
LCS2	94LC121-LC2	Cyanide, Total LCS	94	100	UG/L	94.1
LCS1	94LC122-LC1	Cyanide, Total LCS	97	100	UG/L	97.2
LCS2	94LC122-LC2	Cyanide, Total LCS	99	100	UG/L	98.9

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
2-GW-WM-5S						
TOTAL CYANIDE	001	W	94LC121	05/04/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	001	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-5M						
TOTAL CYANIDE	002	W	94LC121	05/04/94	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	002	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-5D						
TOTAL CYANIDE	003	W	94LC122	05/04/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	003	W	94LSS083	05/04/94	05/06/94	05/09/94
2-GW-WM-6M						
TOTAL CYANIDE	004	W	94LC122	05/03/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	004	W	94LSS083	05/03/94	05/06/94	05/09/94
2-GW-WM-6D						
TOTAL CYANIDE	005	W	94LC122	05/03/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	005	W	94LSS083	05/03/94	05/06/94	05/09/94
TOTAL DISSOLVED SOLI	005 REP	W	94LSS083	05/03/94	05/06/94	05/09/94
2-FB-WM-5D						
TOTAL CYANIDE	006	W	94LC122	05/04/94	05/12/94	05/13/94
TOTAL DISSOLVED SOLI	006	W	94LSS083	05/04/94	05/06/94	05/09/94

LAB QC:

TOTAL CYANIDE	LC1 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	LC2 L	W	94LC121	N/A	05/12/94	05/12/94
TOTAL CYANIDE	MB1	W	94LC121	N/A	05/12/94	05/12/94
TOTAL DISSOLVED SOLI	MB1	W	94LSS083	N/A	05/06/94	05/09/94

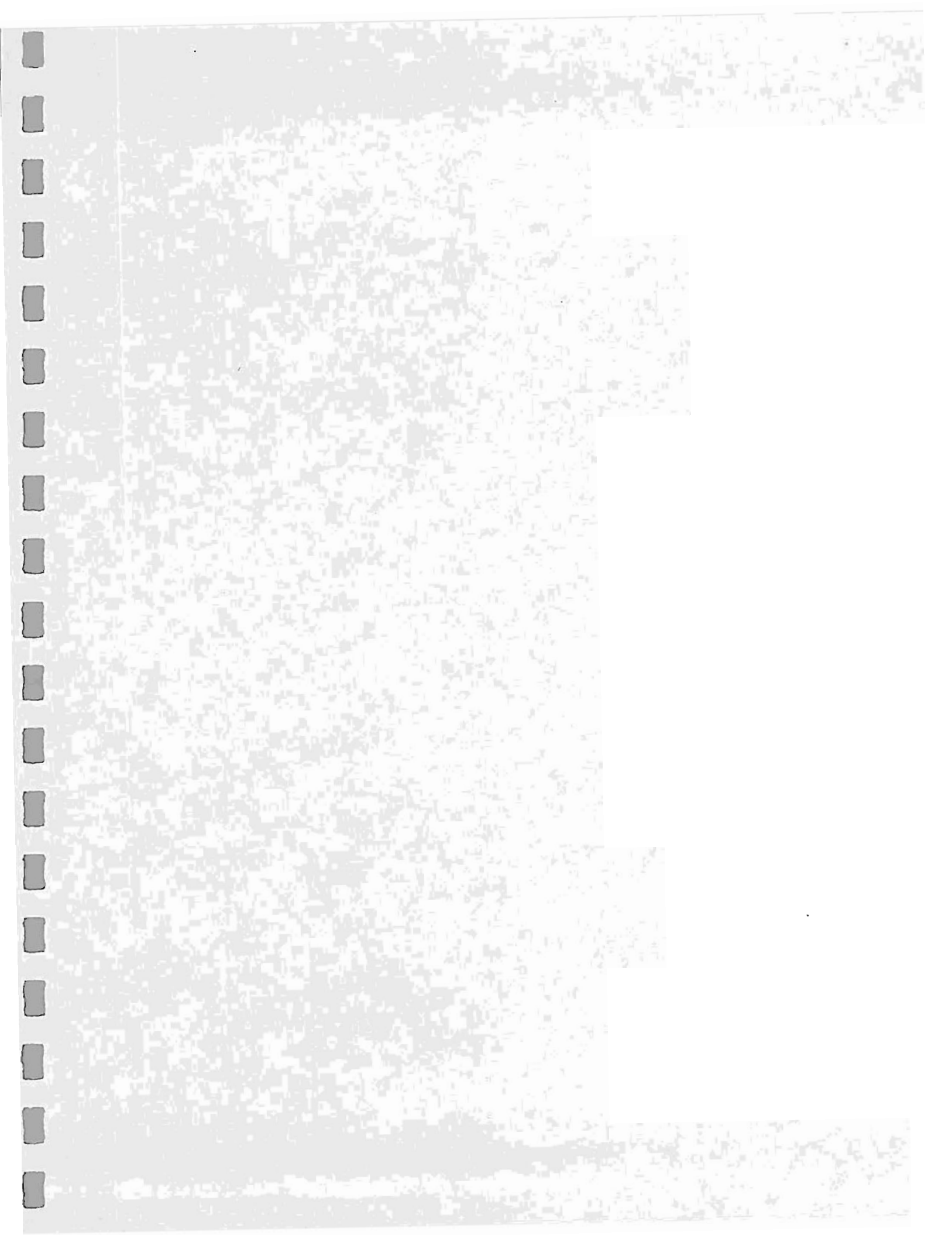
Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

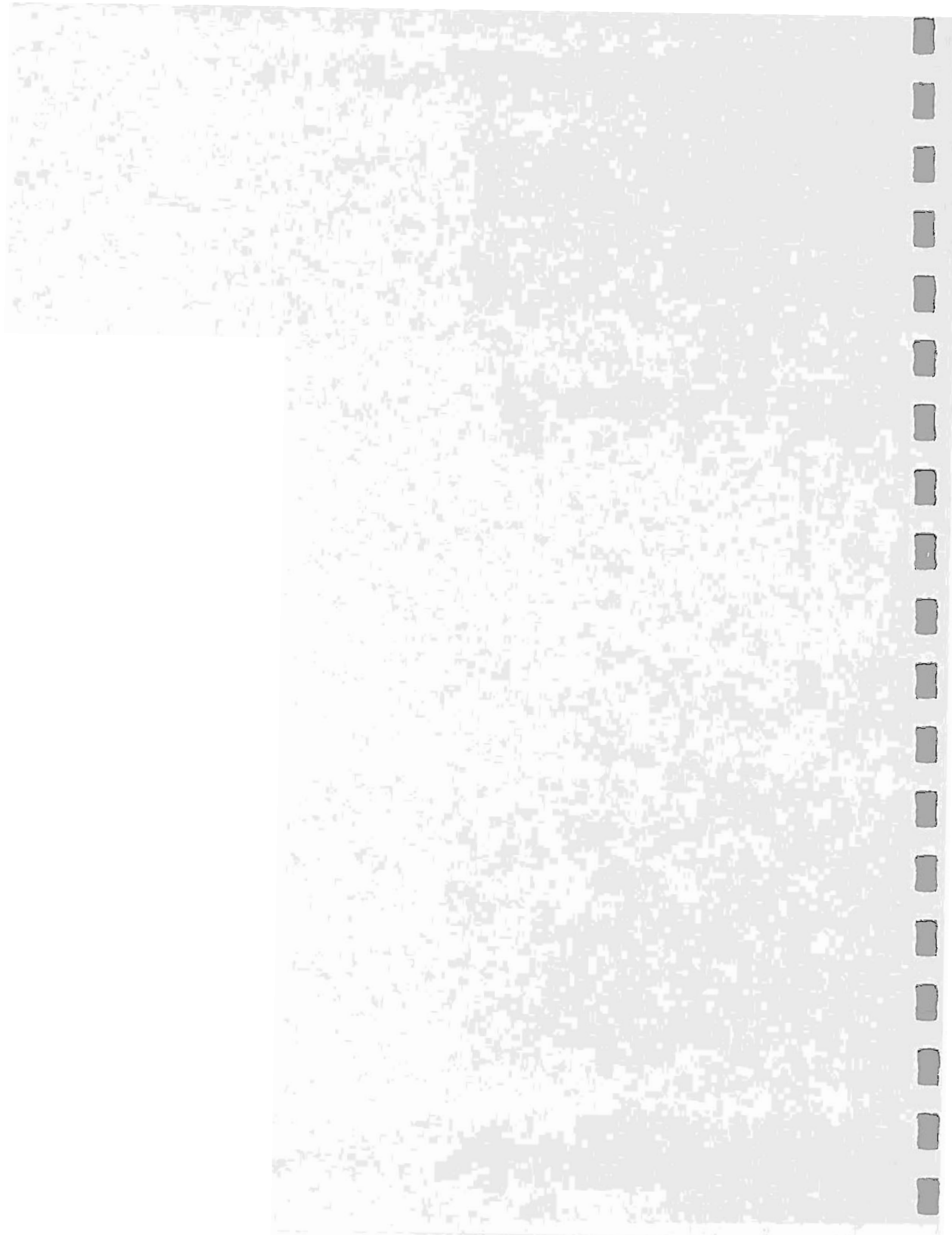
DATE RECEIVED: 05/04/94

RFW LOT # :9405L472

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL DISSOLVED SOLI	MB1 BS	W	94LSS083	N/A	05/06/94	05/09/94
TOTAL DISSOLVED SOLI	MB1 BSD	W	94LSS083	N/A	05/06/94	05/09/94
TOTAL CYANIDE	LC1 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	LC2 L	W	94LC122	N/A	05/12/94	05/13/94
TOTAL CYANIDE	MB1	W	94LC122	N/A	05/12/94	05/13/94









ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client : TCB/EAL
RFW# : 9405L493

W.O. #: 10535-001-001-0070-00
Date Received: 05-06-94

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by the method were met.
2. All preparation blank results were below the required detection limits.
3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.
4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.
6. The analytical methods applied by the laboratory for analyses herein, are derived from the USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed.

(b) (4)

Laboratory Manager
Lionville Analytical Laboratory

5.27.94

Date

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 05/26/94

CLIENT: TCB/EAL

WESTON BATCH #: 94051493

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	2-GW-WM-6S	Cyanide, Total	10.0	u UG/L	10.0	1.0
		Total Dissolved Solids	349	MG/L	5.0	1.0
-002	2-GW-WM-2S	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	1230	MG/L	5.0	1.0
-003	2-GW-WM-1S	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	115	MG/L	5.0	1.0
-005	2-GW-WM-1M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	385	MG/L	5.0	1.0
-006	2-DP-WM-1M	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	408	MG/L	5.0	1.0
-007	2-GW-WM-1D	Cyanide, Total	5.0	u UG/L	5.0	1.0
		Total Dissolved Solids	176	MG/L	5.0	1.0

ROY P. WESTON INC.

INORGANIC METHOD BLANK DATA SUMMARY PAGE 05/26/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L493

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	94LC125-MB1	Cyanide, Total	10.0	u UG/L	10.0	1.0
BLANK10	94LSS084-MB1	Total Dissolved Solids	5.0	u MG/L	5.0	1.0
BLANK1	94LC128-MB1	Cyanide, Total	5.0	u UG/L	5.0	1.0

ROY F. WESTON INC.

INORGANIC ACCURACY REPORT 05/26/94

CLIENT: TCH/EAL

WESTON BATCH #: 94051493

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RSCOV	DILUTION FACTOR (SPK)
BLANK10	94LSS064-MB1	Total Dissolved Solids	99.0	5.0 u	100	99.0	1.0
		Total Dissolved Solids	100	5.0 u	100	100	1.0

ROY P. WESTON INC.

INORGANIC DUPLICATE SPIKE REPORT 05/26/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L493

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		%RPD
			%RECOV	%RECOV	
LCS2	94LC125-LC2	Cyanide, Total LCS	95.1	99.8	4.9
BLANK10	94LSS084-MB1	Total Dissolved Solids	99.0	100	1.0
LCS2	94LC128-LC2	Cyanide, Total LCS	89.4	95.9	7.1

ROY F. WESTON INC.

INORGANIC PRECISION REPORT 05/26/94

CLIENT: TCB/EAL

WESTON BATCH #: 9405L493

WORK ORDER: 10535-001-001-0070-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-007REP	2-GW-WM-1D	Total Dissolved Solids	176	176	0.00	1.0

ROY F. WESTON INC.

INORGANIC LABORATORY CONTROL STANDARDS REPORT 05/26/94

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	94LC125-LC1	Cyanide, Total LCS	95.1	100	UG/L	95.1
LCS2	94LC125-LC2	Cyanide, Total LCS	99.8	100	UG/L	99.8
LCS1	94LC128-LC1	Cyanide, Total LCS	89.4	100	UG/L	89.4
LCS2	94LC128-LC2	Cyanide, Total LCS	95.9	100	UG/L	95.9

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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2-GW-WM-6S

TOTAL CYANIDE	001	W	94LC125	05/04/94	05/16/94	05/16/94
TOTAL DISSOLVED SOLI	001	W	94LSS084	05/04/94	05/09/94	05/10/94

2-GW-WM-2S

TOTAL CYANIDE	002	W	94LC128	05/05/94	05/17/94	05/17/94
TOTAL DISSOLVED SOLI	002	W	94LSS084	05/05/94	05/09/94	05/10/94

2-GW-WM-1S

TOTAL CYANIDE	003	W	94LC128	05/05/94	05/17/94	05/17/94
TOTAL DISSOLVED SOLI	003	W	94LSS084	05/05/94	05/09/94	05/10/94

2-GW-WM-1M

TOTAL CYANIDE	005	W	94LC128	05/05/94	05/17/94	05/17/94
TOTAL DISSOLVED SOLI	005	W	94LSS084	05/05/94	05/09/94	05/10/94

2-DP-WM-1M

TOTAL CYANIDE	006	W	94LC128	05/05/94	05/17/94	05/17/94
TOTAL DISSOLVED SOLI	006	W	94LSS084	05/05/94	05/09/94	05/10/94

2-GW-WM-1D

TOTAL CYANIDE	007	W	94LC128	05/05/94	05/17/94	05/17/94
TOTAL DISSOLVED SOLI	007	W	94LSS084	05/05/94	05/09/94	05/10/94
TOTAL DISSOLVED SOLI	007 REP	W	94LSS084	05/05/94	05/09/94	05/10/94

LAB QC:

TOTAL CYANIDE	LC1 L	W	94LC125	N/A	05/16/94	05/16/94
TOTAL CYANIDE	LC2 L	W	94LC125	N/A	05/16/94	05/16/94
TOTAL CYANIDE	MB1	W	94LC125	N/A	05/16/94	05/16/94
TOTAL DISSOLVED SOLI	MB1	W	94LSS084	N/A	05/09/94	05/10/94

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TCB/EAL

DATE RECEIVED: 05/06/94

RFW LOT # :9405L493

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL DISSOLVED SOLI	MB1 BS	W	94LSS084	N/A	05/09/94	05/10/94
TOTAL DISSOLVED SOLI	MB1 BSD	W	94LSS084	N/A	05/09/94	05/10/94
TOTAL CYANIDE	LC1 L	W	94LC128	N/A	05/17/94	05/17/94
TOTAL CYANIDE	LC2 L	W	94LC128	N/A	05/17/94	05/17/94
TOTAL CYANIDE	MB1	W	94LC128	N/A	05/17/94	05/17/94

